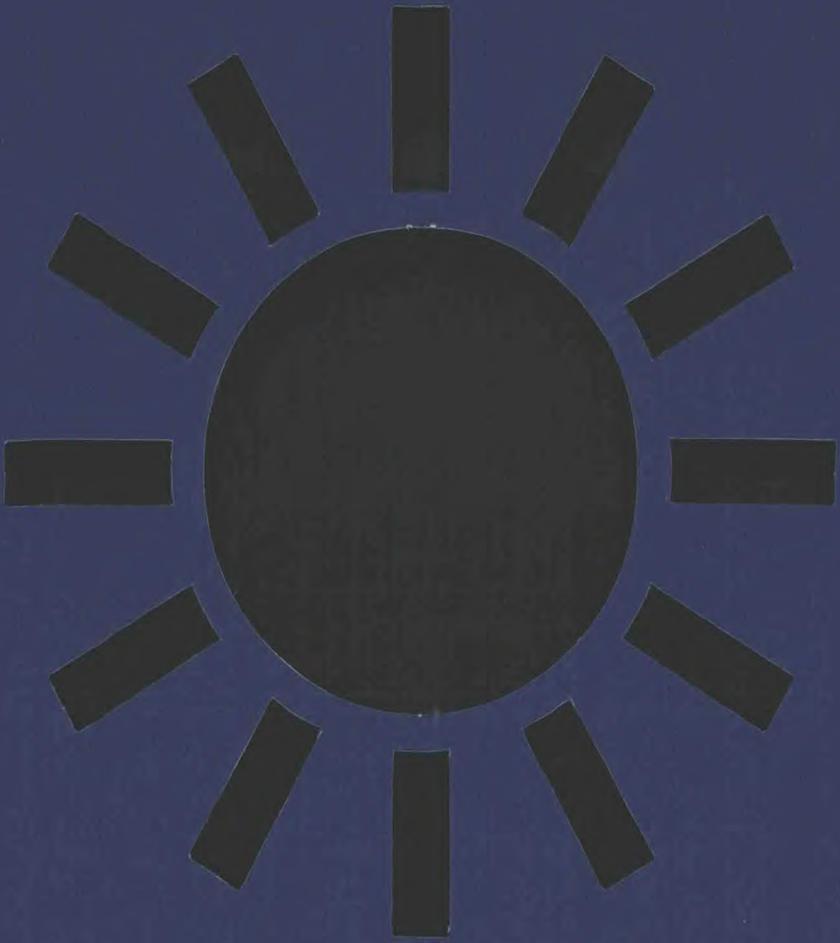
Met Office



Annual Report and Accounts

2006/7

Met Office

An Executive Agency of the Ministry of Defence

Annual Report and Accounts 2006/7

Presented to Parliament pursuant to section 4(6) of the Government Trading Funds Act 1973 as amended by the Government Trading Act 1990

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our vision:

making our forecasts essential to everyone, every day

Directors' report

Introduction

In 1854, a small group of meteorologists led by Vice-Admiral Robert FitzRoy was tasked by the Board of Trade to provide information on the weather and ocean currents to mariners, so beginning the history of the Met Office.

By 1914, separate meteorological units had been created for the Armed Forces and by 1920 we were part of the Air Ministry. In 1964 we were integrated into the Ministry of Defence (MoD) where we remain an essential part of its domestic and overseas operations. But our status and remit have changed considerably over the years – we became an Executive Agency in 1990 and a Trading Fund in 1996, following Statutory Instrument SI 1996/774.

153 years on, the Met Office has evolved into one of the world's leading authorities on the weather and climate. Our key public task is to provide the essential information behind the weather bulletins that many people watch, listen to or read every day and to support the wider priorities of Government and its agencies. We still work to protect those for whom the sea is a workplace or source of leisure, including those in the oil exploration, shipping and defence industries. As this Annual Report and Accounts shows, our remit now involves the provision of essential meteorological data to many other industry sectors such as aviation, retail, utilities and transport. We were delighted that in a 2006 survey funded by Culture Online, part of the Department of Culture, Media and Sport, the weather was officially voted an icon of England.

We continue to develop new science and services in response to key questions about the weather and our changing climate. Whilst climate change can sound a long way off, we are already feeling its impacts in our day-to-day weather. Even in the moderate UK climate summers are getting hotter, winters wetter, as clearly illustrated by the monthly weather summaries in this Annual Report and Accounts.

While scientists at the Met Office Hadley Centre continue to study the causes and effects of climate change, our new consultancy service informs different customers and sectors of the likely risks and opportunities it will bring so they can act now to mitigate, adapt to or exploit them. This year, for example, the Met Office published several pioneering studies on the impacts of climate change on the UK energy industry and separately delivered a major tea importer the ability to manage risks to supply caused by seasonal variability and the impacts of El Niño.

Today's Met Office is a diverse organisation in terms of what we do and the people who do it. We are committed to training and developing our staff to ensure they are able to perform their jobs to the best of their ability, which led to us retaining the prestigious Investor in People standard this year. We are also committed to a policy of Equal Opportunity. The only test we apply to any selection process is the ability to do the job. Our People Change Programme launched this year seeks to improve the recruitment, selection, advancement and reward and recognition of all staff, while making best use of their unique skills to meet current and future demands. To raise awareness of how we work together within the Met Office we recently introduced drama-based training on diversity issues.

We have a constructive relationship with the Trade Union, negotiating with Prospect on pay and consulting on a range of other staff-related issues, including terms and conditions of employment. The Met Office Functional Whitley Committee and its sub-committees provide more formal mechanisms for consultation with staff. We regard their health, safety and welfare, and that of others working on our behalf, to be of paramount importance and employ a full-time Health and Safety Officer to ensure that everyone is fully aware of their responsibilities in this regard.

To our staff and customers alike we must offer confidence as well as care. It is our job to make sure you have the right information at the right time – from helping you decide whether or not to take an umbrella, to informing the choices that will determine how and where our climate changes and the impacts it will have. We employ the right people with the right skills who can offer you excellence in weather and climate forecasting, scientific consultancy and customer service. The Met Office is an enduring brand with a strong heritage, widely recognised in the UK and overseas. We will go on building a modern and dynamic organisation that responds swiftly to its customers' changing needs so that we, like the weather, remain an icon of the nation.

Introduction from the Chair of the Met Office Board

Robert Napier
Chairman

It is a great honour to lead the Board of this inspiring organisation, after succeeding Clay Brendish in this important responsibility last October. Synonymous with weather forecasting and climate change science, the Met Office is a familiar brand name to households the length and breadth of the UK, and to many overseas.

Long before I picked up this mantle, I was aware of the Met Office and the important work that it does. Like most people, I watch, listen to or read my local weather forecast each day; but I became particularly familiar with the Met Office through my work as Chief Executive of the World Wildlife Fund (WWF). Everyday weather events and the longer term implications of climate change have a considerable impact on the species and habitats around the world that WWF is seeking to protect and the Met Office helps inform the decisions that we have to make.

Early in my Chairmanship, I took steps to clarify the Board's role in overseeing the Met Office's performance and in scrutinising and challenging its strategic investment plans. I also commenced action to recruit two new Non-Executive Directors to supplement the experience and skills we bring to bear on this task. This coincided with our responsibility in late 2006 to review and approve the Met Office's Corporate Plan 2007–2011. The Met Office understands the weather and climate like no other organisation and deservedly occupies a world-leading position in Numerical Weather Prediction, in meteorological service provision and, through the work of the internationally renowned Met Office Hadley Centre, in climate research. The Corporate Plan is about maintaining and expanding on this outstanding scientific capability to ensure the Met Office remains relevant and influential in the years to come. Exploiting this unrivalled expertise to offer direct business solutions to Met Office customers, in addition to supplying them with critical information on the weather and climate, is a key business opportunity we will now grasp. The Corporate Plan sets out an ambitious but realistic route to achieving this outcome in an increasingly competitive environment.

As our national meteorological service, the Met Office provides the essential information that goes into daily weather bulletins on television, radio, online and in printed media. It also works closely with the aviation industry to keep air travel safe and flights on time and with the marine sector to protect those taking to sea for work or leisure. The weather influences many products and the Met Office works directly with the retail sector to maximise the business potential and reduce the risk of weather impacts. Government departments and agencies rely on Met Office forecasts and information to look after public health, safety and security at home and abroad. Where government and businesses converge, in a concerted effort to tackle climate change, the Met Office is ready with advice based on its latest scientific findings and, through its consulting service, to inform the best course of action.

This new business focus is helping customers plan now, in the face of climate change, for a more certain future. Doing so involves asking what the climate will be like in five, ten or twenty years' time and looking ahead to the extreme weather events we may experience on the way and what the physical and economic impacts might be. Timely and accurate predictions of this sort may not only reduce the damaging effects of climate change but enable government and businesses in particular to plan infrastructures, increase efficiency and improve the way products and services are delivered in turn to their own customers. In short, planning now could mean profits later, while failing to plan will create potentially huge economic and social costs.

In 2007/8 and beyond the future for the Met Office is one of responsibility, opportunity and challenge. Responsibility in continuing to fulfil its public task by providing essential day-to-day weather forecasts, protecting its brand and reputation. Exploiting new opportunities by packaging its weather and climate change science in a way that is meaningful to government and businesses, while acting to protect the world we live in. Responding to the challenge of staying ahead in a growing marketplace by offering world-class science, customer focus and service excellence.

After six rewarding months in post, and with better knowledge of the Met Office and its committed staff, I have complete confidence that it will meet all three of these objectives to its enduring success.

Chief Executive's overview

Mark Hutchinson
Chief Executive

This has been another very successful year at the Met Office, building on the momentum of our achievements in 2005/6 and meeting all of our Key Performance Targets (KPTs) for the second year running in 2006/7.

As the following pages show, this has also been a year of dynamic weather — an exceptionally showery spring, followed by a record-breaking hot summer and mild autumn / winter with snow towards the end of the season. For this reason, we have made the weather a key feature of this Annual Report and Accounts to highlight its variability and power while demonstrating the Met Office's capability in forecasting the days, months and seasons ahead. I am pleased to report that we achieved our highest ever forecast accuracy rate this year.

In parallel to the weather, our work in studying the climate has been brought to the fore this year. With much of the world sensitised to the impact of climate change, the Met Office has a major role in informing governments, businesses and individuals of the range of possible outcomes by continuing to study its causes and effects. Using models similar to those used to forecast the weather, our scientists can illustrate who and where are likely to be affected by climate change, over what timescale and — within stated ranges of uncertainty — to what extent. Our scientists share their expertise in international fora because tackling climate change requires a global effort, and they made a significant input to the fourth assessment report of the Intergovernmental Panel on Climate Change, which in Spring 2007 highlighted the worldwide consensus that warming of the planet is now unequivocal and indisputable. In 2006, our scientists also made a significant contribution to the Stern Review on the Economics of Climate Change which costed taking action now against the greater economic and environmental burden of inaction.

As some climate changes have already occurred which cannot be reversed, the Met Office also has a role in advising on how businesses and societies will need to adapt to the changes as well as on what action we can still take to limit the future impact. Our new consulting service set up in 2006 takes our science and applies it to different customers and market sectors so they too can work out in advance the likely risks and opportunities climate change will bring and take appropriate action now to mitigate, adapt to or exploit them. The extreme weather we may encounter on the way and, in particular, how it might affect government and businesses is a big question our scientists and consultants are working hard to answer.

By focusing on our customers' needs and offering tailored solutions we have been able to meet our commercial profitability targets this year, winning new business in a competitive environment as well as securing long-term contracts for non-competed Government services worth more than £500 million over the next five years.

The role and future direction of the Met Office were scrutinised in-year by the House of Commons Defence Committee which highlighted the importance of our public task to provide a high-quality national meteorological service in support of defence, the wider priorities of government and the UK public. It also drew attention to our international reputation for scientific excellence in weather forecasting and climate research and the importance of our commercial performance. Comparing earnings with the capital invested in the Met Office by the Government in 2006/7, we have achieved an acceptable Return on Capital Employed this year.

Delivering the challenging targets in the new Corporate Plan will require a certain amount of change in the way we operate. In 2006, we completed the centralisation of our civil weather forecast production into the twin Operations Centres at Exeter and Aberdeen. This complex project was delivered to time and budget and with no breaks in service and is already delivering major cost savings. An internal Change Programme is also well underway which includes dedicated projects to build further on our scientific authority, to develop and reward our talented workforce, to integrate world-class technology into our services, and to promote a culture of customer service and delivery across the organisation. All of these will reinforce our reputation and brand in the years to come.

In this busy year, I was extremely pleased to welcome Robert Napier as the new Chairman of the Met Office Board. We have achieved a great deal this year; and, whilst recognising this, we are determined to channel the energy and commitment that our successes bring to achieve even more in 2007/8.

Management structures

Met Office Owner's Council

Strategic oversight on behalf of our Owner, the Secretary of State for Defence, is provided by the Met Office Owner's Council.

Met Office Board

The Met Office Board includes a number of Non-Executive Directors who approve the strategic direction of the Met Office and oversee its performance.

Executive

The Executive is responsible for the strategic and corporate management of the Met Office on a day-to-day basis. It is accountable to the Met Office Board.

Prospect

With over 70 years' experience in the public sector, Prospect is the only recognised Trade Union for Met Office staff. Current membership is in excess of 70% of employees.

Register of Interests

The Met Office maintains a public Register of Interests which details company directorships and other significant interests held by Board members which may conflict with their management responsibilities. Persons wishing to view the Register should apply in writing to the Corporate Services Director, Met Office, FitzRoy Road, Exeter, EX1 3PB.

Executive Directors

Mark Hutchinson
Chief Executive

Prof. John Mitchell
Chief Scientist

Dr. David Griggs
Government Business Director

Dr. Phil Johnston
Commercial Business Director

Ian Carlson
Finance Director

Diana Formby
Corporate Services Director

Steve Noyes
Operations & Customer Services Director

Dr. Alan Dickinson
Science & Technology Director

Non-Executive Directors

Robert Napier
Chairman

James May
Non-Executive Director

Denise Harker
Non-Executive Director

Prof. Brian Hoskins
Non-Executive Director

Met Office Owner's Council	Met Office Board	Executive	Audit Committee	*Membership at 31 March 2007*
●	●	●	*	**Mark Hutchinson** Chief Executive
	●	●		**Prof. John Mitchell OBE FRS** Chief Scientist
	●	●		**Steve Noyes** Operations and Customer Services Director
		●		**Dr. Phil Johnston** Commercial Business Director [1]
	●	●		**Diana Formby** Corporate Services Director
		●		**Dr. David Griggs** Government Business Director
*	●	●	*	**Ian Carlson** Finance Director [2]
	●	●		**Dr. Alan Dickinson** Science and Technology Director
●	●			**Robert Napier** Chairman [3]
	●		●	**James May** Non-Executive Director
	●			**Prof. Brian Hoskins CBE FRS** Non-Executive Director
	●		●	**Denise Harker** Non-Executive Director
*	*			**Diane Shaw** Deputy Director of Business Delivery, Ministry of Defence [4]
	*			**Phillipa Childs** Prospect [5]
●				**Derek Twigg MP** Under Secretary of State for Defence – Chair [6]
●				**Sir Ian Andrews CBE TD** 2nd Permanent Under Secretary, Ministry of Defence
●				**Dr. Gwynneth Flower FIEE** Chair of the National Meteorology Service Commissioning Group
●				**Peter Schofield** Shareholder Executive
●				**Prof. Sir Roy Anderson FRS** Chief Scientific Adviser, Ministry of Defence
●				**David Filkin** Non-Executive Director (Advisor on Public Met. Service)
●				**David McMillan** Department for Transport
●				**Henry Derwent** Department for Environment, Food and Rural Affairs

* Invited attendees

[1] Replaced Ian Carlson (interim Director Sales and Marketing) From 9 May 2006

[2] From 9 May – 3 December 2006 Ian was Deputy Director of Finance and Corporate Services. Finance Director from 4 December 2006

[3] Replaced Clay Brendish from 1 October 2006

[4] Replaced Mark Preston from 1 March 2007

[5] Replaced Jim Cooper from 6 February 2007

[6] Replaced Tom Watson MP from 6 September 2006

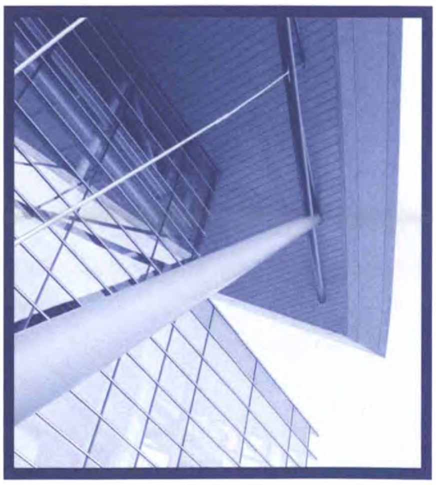
Corporate Plan 2007–2011

This has been an important year for clarifying the vision and strategic direction of the Met Office. In the past twelve months we have published our vision, 'making our forecasts essential to everyone, every day' and outlined our strategic direction in Shaping our Future which accompanies the updated Corporate Plan 2007–2011. Both documents ensure that everything we do takes us a step closer to our vision and build on the momentum and commitments of the previous Corporate Plan 2005–2010.

Setting out our Top Level Objectives, our new Corporate Plan recognises that we provide our services against a backdrop of increasing worldwide interest in climate change, extreme weather events and natural environmental issues. Whilst this environment presents us with real opportunities for growth, it also exposes the Met Office to greater competition from within Government, the private sector, academia and international organisations. As a world-leading authority on the weather and climate change we must continue to respond quickly to new markets with effective products and services, driven by our world-class science and research.

The external marketplace holds numerous opportunities for us to realise our corporate objectives but the root of our success lies in our ability to understand the needs and requirements of our customers. It is essential that we focus on them and, in doing so, organise ourselves to work as one joined-up team. Our Corporate Plan 2007–2011 reflects this as our highest priority by centring on two major themes – 'customer focus' and a 'joined-up Met Office that delivers'. Our key achievements in 2006/7 under these two headings are presented within the pages of this Annual Report and Accounts.

Above all, the Corporate Plan 2007–2011 identifies what the Met Office must do to stay ahead. Planning for success involves making the most of new opportunities while delivering value to our many customers, from the general public through Government and local authorities to almost every industry within the commercial sector. By investing in the right skills and with the right framework, the potential for scientific discovery, innovation and business investment and growth at the Met Office is enormous. These are exciting times; 2006/7 was a critical year for building on our successes whilst securing our future direction and well-being.



Management commentary

Key Performance Targets

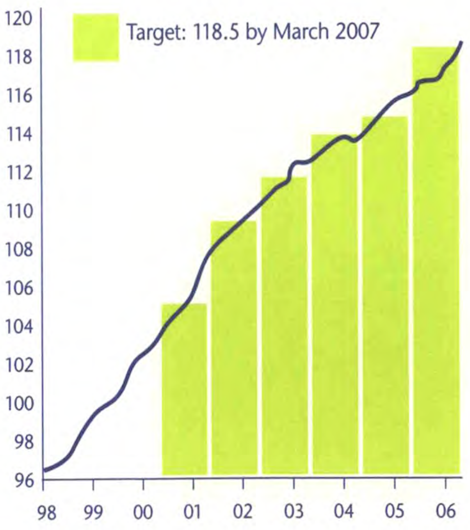
For the second year running, we have met all of our Key Performance Targets (KPTs) – a significant achievement. The KPTs measure the accuracy of our forecasts, our Commercial Business profitability, Return on Capital Employed and the support we provide to Government.

Forecast accuracy

We assess forecast accuracy against four different measures:

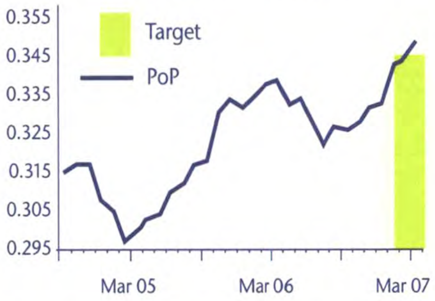
Globally, we look at the performance of our computer-based forecasting systems using a Numerical Weather Prediction (NWP) Index. This allows month-by-month comparisons of performance and the graph below shows a sustained improvement in the accuracy of our forecasts since 1998.

Numerical weather prediction index

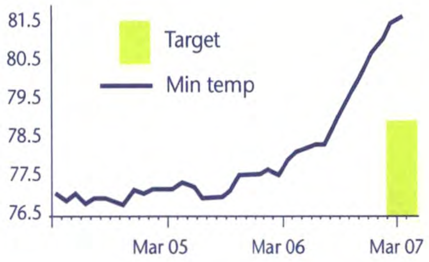


We also measure the accuracy of our forecasts closer to home by comparing 24-hour forecasts of rainfall, minimum temperature and maximum temperature with what actually happened in 11 UK cities. These measures are very dependent on the weather itself, but the following graphs show that we continue to make good progress in all three elements.

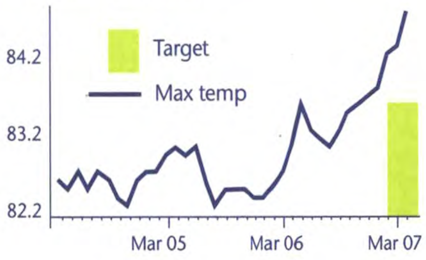
Probability of precipitation – skill score



Minimum temperature



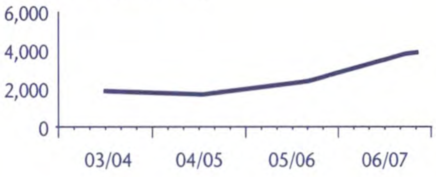
Maximum temperature



Commercial profitability

The targets set for commercial profitability remain challenging but we are making steady progress towards our goal of £12 million of commercial profit by 2012. This year, the target was to achieve £3.6 million of commercial profit and we exceeded this by some £300,000.

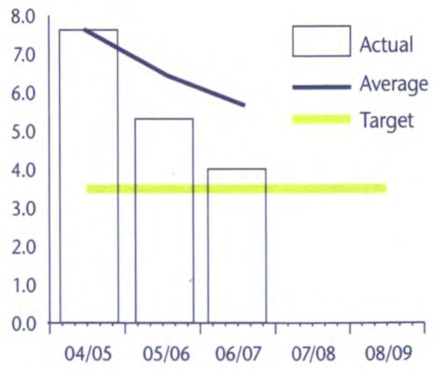
Commercial profit (£k)



Return on Capital Employed (ROCE)

This year's ROCE is 4% against an in-year Key Performance Target of 3.5%. Alongside this KPT we have a target set by the Treasury to provide an average ROCE of 3.5% over five years. Our current average ROCE is 5.6% so we are meeting this target comfortably.

ROCE history



Support to wider Government goals

Building on last year's success, we signed multi-year agreements with most of our major Government customers and introduced new annual agreements across an increasing number of other government departments and agencies.

In many cases, the multi-year agreements include efficiency savings or incentivised pricing schemes that will bring significant benefits to both the Met Office and its customers.

April

Weather highlights

April was quite a changeable month in England and Wales with Atlantic depressions crossing the north of the UK and sinking south-east across the North Sea bringing some unsettled spells of weather with rain, sleet and at times hail and snow. Heavy snow showers on 9 April resulted in the closure of the M62 for a few hours and there was a covering of snow in other parts, with 15 cm reported from Tunbridge Wells (Kent) on 10 April. The mean rainfall total for the month was below average but with a range from close to normal across north Wales and north-west England to significantly below normal in parts of the south-west. Temperature highs and lows for the UK in April were -6.9 °C at Tulloch Bridge (Highlands) on 10 April and 19.7 °C at Herstmonceux (East Sussex) on 21 April.

In Scotland, unsettled and mostly showery conditions were the main features of April's weather. Cold temperatures in the first weeks of the month were emphasised by strong winds at times, with gusts reaching 64 mph at Stornoway (Isle of Lewis) on 6 April. Over the same period, hard frosts and daybreak temperatures of between -3 and -6 °C were notable events in Northern Ireland and were accompanied by occasional heavy showers (some falling as hail) and localised thunderstorms.

Understanding climate change

US government report

The Met Office Hadley Centre made a significant contribution to a report into man-made climate change published this month, entitled *Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences*, which was commissioned by the Climate Change Science Program of the United States (US) government. This was a first for the US government and therefore very significant. The findings have since been discussed in Congress and may find their way into US government policy. Publication of the report led to considerable media interest including from the New York Times, the Washington Post and BBC online.

Special weather

In addition to predicting what the weather has in store for the next hour, day, five days or ten and the months and seasons ahead, Met Office forecasters produce special forecasts for high-profile events, at home and abroad, which this month included the eightieth Birthday of HRH Queen Elizabeth II on 21 April (a warm, mainly dry day with temperatures of up to 17 °C in London) and the London marathon on 23 April (cloudy with some showery rain, light winds and temperatures up to 15 °C).

Unified Model

In the past, the Met Office's Unified Model for weather and climate prediction was made available to external users for research purposes only. In 2006, the Met Office Board agreed that, in addition, the Unified Model should be made available under licence to other National Met. Services (NMSs) in order to contribute to the scientific and technical strength of the Model. Operational use by other NMSs endorses the world-leading capability that the Unified Model provides and increases the Met Office's international presence.

Good causes

The Met Office again supported the charitable trust of Exeter-based radio station, Gemini FM, this year. With our support, the Trust raised over £150,000 for good causes in the local community. We also sponsored The Prince's Trust *Young Achiever of the Year* award for the third year running and hosted the launch of its *Enterprise Project* at our headquarters in early 2007.

New training courses

Following a major survey of potential aviation customers, successful new aviation training courses were launched during the year. These include courses for balloonists, international aviation forecasters and international airport met. observers.

Cost effectiveness

The previous national contract for maintenance at our frontline stations has been replaced by regional and local contracts to improve the cost effectiveness and efficiency of service delivery. The first full year of operation has seen a significant improvement in the level of service provided.

MMS roll-out

Phase 1 of the Meteorological Monitoring System (MMS) project (making good the existing infrastructure) was rolled out throughout the year. The MMS project will, over time, replace existing Met Office automatic weather stations, taking advantage of improvements in Information Technology. Crucially, the MMS enables the Met Office to meet changing requirements more effectively, especially the adding and changing of sensors, to respond more flexibly to evolving customer needs.

May

Weather highlights

A warm spell in England and Wales earlier in the month saw Northolt and central London recording a maximum temperature of 27.7 °C on 4 May. But this was followed mid-month by gusts of 60 mph and more than 30 mm of rain in some parts. As the rain band settled across the east of the UK, further notable rainfall totals were recorded at Holbeach (Lincolnshire) and Wattisham (Suffolk) with 40 mm and 34 mm respectively. High pressure across much of the UK on 10–12 May brought plenty of dry, sunny and warm weather but also triggered some thunderstorms, particularly on 10 May when an organised cluster of storms developed across Oxfordshire, Berkshire and Hampshire and drifted slowly west. Forecasters identified the risk of these storms at an early stage and emergency planners were contacted prior to the issue of Flash Warnings.

The Hebrides and west coast of Scotland also experienced severe thunderstorms — highly unusual for this part of the world at any time, let alone in early May. Mid-month saw a period of sunnier weather in Scotland with a maximum temperature of 24 °C, but a cold front moved slowly south and introduced a dramatic drop in temperature.

Northern Ireland also experienced unseasonably cold weather, with coastal gales and rain in the east on 2 May, giving 10–15 mm in places. 4 May brought even more dramatic weather when 180 lightning strikes affected the electricity network leaving 10,000 homes without power, with east Co. Antrim and Co. Down worst affected.

Understanding climate change

Brazil project

Following a proposal submitted by the Met Office Hadley Centre, the Foreign and Commonwealth Office funded a *Dangerous Climate Change in Brazil* project from its Global Opportunities Fund. The Amazonian forests are vulnerable to global climate change, particularly to changes in rainfall, and a number of results from established computer models suggest a significant risk of reduced rainfall over Amazonia leading to die-back of the forests. Fragmentation of the forest due to direct human land use may also increase the vulnerability of the remaining forest to climate change. On 22 May, Met Office climate scientists spoke at a UK-Brazil event at the Royal Society, London, attended by Professor Sir David King, Chief Scientific Adviser to the UK Government, the Brazilian Ambassador to the UK and the Brazilian Minister for Science and Technology. A briefing was also prepared for use by the Rt. Hon. David Milliband MP (then Secretary of State at the Department for Environment, Food and Rural Affairs) during the state visit of President Lula da Silva of Brazil.

Sir David Attenborough

Filming took place at the Met Office, Exeter, for a two-part BBC programme, presented by Sir David Attenborough, entitled *Are We Changing Planet Earth?* Climate scientists at the Met Office worked closely with the BBC in researching the programme which closely featured various modelling and attribution studies conducted by the Met Office Hadley Centre.

©Nottingham Wildlife Trust

Water shortages

Overall, it was the wettest May in England and Wales for more than quarter of a century although the above-average rainfall was not enough to remedy water shortages particularly across south-east and central southern England following two consecutive dry winters. As summer 2006 got underway the Environment Agency, working closely with the Met Office, grew increasingly concerned about public water supplies in Kent, Sussex and London. By the end of the month, Drought Orders and hosepipe bans had already been imposed in some areas, while the rest of the country was advised to watch the amount of water it used.

Ensemble forecasting

When expensive actions depend on a forecast, it is important to know its uncertainty. The Met Office ensemble forecasting system (MOGREPS) was developed to provide uncertainty estimates for short-range forecasts. Instead of running just a single forecast, the model is run a number of times from slightly different starting conditions to take account of the chaotic nature of the atmosphere. On some days, the forecasts from different ensemble members are all quite similar, which gives us confidence that we can issue a reliable forecast. On others, the members can differ widely and we have to be more cautious. An extended 15-day ensemble was implemented this month as part of the World Meteorological Organization's THORPEX research programme to investigate whether a multi-model ensemble can extend skilful weather forecasting two weeks ahead.

Aviation seminar

A successful half-day aviation customer seminar was held at Heathrow, London this month. It was attended by 30 delegates representing various airlines, the British Airports Authority and our flight briefing partner, SITA. Presentations were given on subjects as wide-ranging as probability forecasting, centralising production and forecasting at Heathrow, as well as an overview of Met Office services to civil aviation. There was an opportunity for discussion, product demonstration and feedback, which was positive and encouraging.

Arctic adventurers

When British adventurers the Arctic Foxes set out to become the first all-female team to cross the Greenland ice-cap they sought Met Office help in getting there and back again safely and in record time. The Foxes reported that speaking to our forecasters each day was one of the highlights of their successful expedition.

National treasure

The National Meteorological Library holds one of the world's finest collections of weather and climate resources. The Library is open to visitors five days a week, but also offers a free national enquiry service for weather-related topics. It recently launched a comprehensive online subject index that now makes it much easier for users to find key information from within the Library catalogue. As a result, helped by the Library, this wealth of resources is more visible, accessible and useful to the nation.

June

Weather highlights

The above-average rainfall of the previous month gave way to dry and sunny conditions in early June as hot Mediterranean air brought warm temperatures to England and Wales. Tenby (Pembrokeshire) recorded 14.5 hours of sunshine on 2 June and Ross-on-Wye (Herefordshire) reached 27 °C on 8 June. Mean temperatures were generally 1 to 2 °C above average throughout the month, with central London recording a maximum temperature of 32.4 °C on 12 June. A deep area of low pressure developed in the Atlantic on 19 June in association with ex-tropical storm Alberto. This produced some unusually strong winds for June with Capel Curig (Gwynedd) recording a gust of 62 mph on 20 June and gusts generally 46–51 mph across Wales and northern England on the 21–22 June. This low pressure then centred over south-west England and there were reports of localised flooding from Penzance (Cornwall) when over 76 mm of rain fell on 26 June.

Over much of central, southern and western Scotland the month also started dry and warm. On 6 June the temperature rose to 26 °C at Leuchars (Fife) and by 10 June had reached 28 °C on the west coast. However, the Atlantic depression brought a band of rain and gusts up to 54 mph at Loch Glascarnoch (Ullapool) and Baltasound (Shetland) on 12–13 June. An even deeper low then crossed the country on 20–21 June when Kinlochewe (Highlands) recorded a two-day rainfall total of 95 mm and gusts reached 56 mph at Barra (Western Isles).

Meanwhile, sunny skies prevailed in Northern Ireland and there was no measurable rain anywhere until the morning of the 12 June. The highest temperature of the month was 27 °C which was recorded at Derrylin (Co. Fermanagh) on 8 June. However, the hot weather was replaced by a deep low which tracked to the north-west of Ireland on 18–23 June bringing showers, longer periods of rain and unusually windy weather for mid-summer with westerly winds reaching gale force at times.

Understanding climate change

Landmark collaboration

The Met Office and a group of leading energy companies this month announced the findings of a new study into climate change and its potential impacts on the UK energy industry. In a landmark collaboration, the Met Office teamed up with E.ON-UK, EDF Energy and National Grid to use climate predictions created by the Met Office Hadley Centre to understand how climate change will affect future energy use and demand, and what further information the industry may need to adapt to those changes. It also identified areas requiring further research which will help guide any wider studies in the future.

Healthy sun

In the UK, the prospect of a heatwave – a combination of unbroken daytime highs of 28–30 °C, humidity and warm nights – triggered the first Heat-Health warning of the summer on 9 June 2006. Warnings and advice during periods of heat and sun are issued by the Met Office, in association with the Department of Health and the National Assembly of Wales, to help vulnerable groups, especially the elderly and the young, deal with the impacts of hot weather.

Beat the drought

The Met Office met with the Beat the Drought group of water companies this month to discuss ways in which our information could help mitigate the impacts of the drought in the South East of England, by promoting awareness of what actions the public can take to better preserve water resources.

Forecasts from the centre

Centralising, at Met Office sites in Exeter and Aberdeen, much of the work previously carried out in the civil forecasting units, has enabled us to more efficiently deliver services to many customers. This centralisation has further developed our one team culture, customer focus and forecaster knowledge at the Aberdeen and Exeter Operations Centres.

WMO Executive Council

The Met Office represented UK interests at the Executive Council meeting of the World Meteorological Organization (WMO) this month. Outcomes included a move towards a shorter, more focused Strategic Plan for the WMO and agreement on its outputs for 2008–11. The Head of the Pakistan Met. Service gave public thanks to the Met Office for the forecasts we provided following the Pakistan earthquake in October 2005. Scientists from the Met Office were also awarded the Väisälä Prize for the *Development and Implementation of Instruments and Methods of Observation*.

Radar agreement

A radar arrangement was signed this month by the Met Office and the Environment Agency (EA). This covers the support, maintenance and data provision relating to the jointly owned EA/Met Office radars in England and Wales.

Wimbledon

Once again, the Met Office worked closely with BBC Sport to provide weather forecasts during the Wimbledon Championships this month, held at The All England Lawn Tennis and Croquet Club. Services included emailed or faxed forecasts from Met Office, London, issued three times a day (with hourly updates in between); telephone consultancy with the duty forecaster at Met Office, London; access to localised radar through the web; and a BBC Weather Centre forecaster on site to offer live commentary.

Handbook

A *Handbook of Climate Trends across Scotland* was launched this month at an event hosted by the Scottish Executive. The Handbook and supporting Technical Report – key deliverables from a project managed by the Met Office, in collaboration with ADAS – has been very well received across Scottish Executive departments, agencies and public bodies in Scotland.

July

Weather highlights

Early in the month an unsettled period brought torrential thundery downpours, large hail and localised flooding to many parts of England and Wales. However, temperatures were very warm with 32.3 °C recorded at Heathrow (London) on 2 July. Temperatures peaked on 19th when a UK record-breaking July temperature of 36.5 °C was reported at Wisley (Surrey). Wales also set a new July record with 34.6 °C recorded at Gogerddan (Ceredigion). England and Wales had its warmest calendar month (areal series back to 1914) and highest sunshine total for a calendar month (areal series back to 1929). Very settled weather, with cloudless skies and strong sunshine were the cause of these hot temperatures which intensified mid-month as even hotter air reached the UK from continental Europe. But there was some rain. Thunderstorms occurred across southern counties on 22 July, some of which were severe with Monks Wood (Cambridgeshire) logging 30.2 mm of rain in an hour. On 27 July, there were further thunderstorms over southern England and in the eastern counties as far north as Lincolnshire which gave very heavy rain in Surrey, flooding in Milton Keynes and contributed to a landslip on the London Underground towards Heathrow. Cranwell (Lincolnshire) recorded a gust of 69 mph. Throughout this period it was still very warm or hot, with temperatures reaching 34 °C in central London on 26 July.

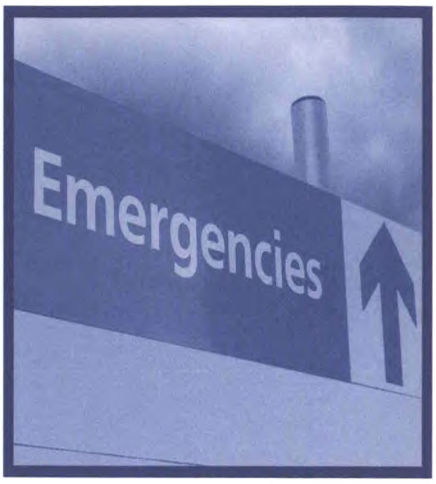
Scotland similarly experienced thundery showers at the beginning of the month but there was still sufficient sunshine to raise temperatures to 28 °C at Eskdalemuir (Dumfries and Galloway) on 2 July. Temperatures then rose steadily day by day and the hottest temperature was also recorded on 19 July when Prestwick (South Ayrshire) reached 31.3 °C.

In Northern Ireland, the month opened with warm sunny spells that on 4 July were replaced by thunderstorms. Pressure started to rise from 13 July and temperatures increased daily, reaching a maximum of 30.3 °C as Peatlands (Co. Armagh) on 19 July — the highest temperature for any month in Northern Ireland since 1995.

Understanding climate change

PRECIS workshop

PRECIS (Providing Regional Climates for Impacts Studies) is a regional climate model made freely available to groups of developing countries to assess their vulnerability to climate change, study its impacts and find options for adaptation. The latest UK-based three-day workshop was held this month at the University of Reading and was hosted by members of the PRECIS team at the Met Office. There is no fee or charge associated with attendance at the workshops (generally three workshops are held every year in different countries) other than delegates' own accommodation and subsistence charges.



Staying healthy

The Met Office raised the Heat-Health warning to Level 3 — the first time this level had been reached since the service started in 2004 — as July provided the UK with the highest temperature ever recorded. Over the summer (June to August), temperatures were most intense in central England reaching more than 2.4 °C above average. Elsewhere, in regions nearer the coast, temperatures were mostly between 1.6 °C and 2.4 °C hotter.

Forecasting ahead

As the UK was basking in this summer sunshine, the Met Office published an early indication of what type of winter was expected, following the success of the winter forecast 2005/6. The signal was for a milder, wetter season than the previous year. Publishing forecasts for each season on the Met Office website and in press releases is still in its infancy and further investment is planned to improve the skill and value of these forecasts.

NATO Response Force

The Met Office has the capacity to rapidly relocate its weather, ocean and wave models to any area of interest worldwide. Its skill in accurately depicting environments led the UK to be chosen as the first Lead Nation and the Met Office, in conjunction with the Royal Navy, delivered information to several NATO exercises this year.

EUMETSAT Council

The Met Office represented the UK this month at a EUMETSAT Council meeting where it was agreed to constrain the cost to Member States of the Meteosat Third Generation programme to no more than that of the Second Generation programme on an equivalent lifetime basis. In addition, the strategic framework for future EUMETSAT activities in operational meteorology, climate monitoring and associated environmental concerns was adopted.

August

Weather highlights

Eastern England turned unseasonably cold and windy with just 15 °C recorded at Scarborough (North Yorkshire) on 2 August. It took until 4 August for sunshine to spread from the west into eastern areas. A cold front brought some heavy rain overnight into 7 August to East Anglia and then to East Sussex and Kent. As temperatures lifted, thunderstorms developed with flash flooding reported in Eastbourne (East Sussex), and Pershore (Worcestershire) reached 29.7 °C — the highest temperature for the month across **England and Wales**. More thundery showers developed in a convergence line from Suffolk to Hampshire in the afternoon of 13 August, with torrential downpours in places. There was localised flooding in the Aldershot to Farnham to Bagshot areas where possibly as much as 100 mm of rain fell. Durham reached just 13 °C. Further bands of heavy and thundery showers moved into southern England overnight and through 17 August when a tornado was spotted near Leamington Spa (Warwickshire) and at Market Deeping (Lincolnshire). Torquay (Devon) also received 48.6 mm of rain over 24 hours that day. Overall, sunshine levels in August were close to or below average, while East Anglia experienced around double the average rainfall.

In **Scotland**, unsettled conditions prevailed throughout most of August. Loch Glascarnoch (Ullapool) recorded 28 mm of rain on 9 August and winds gusted to 56 mph at Lerwick (Shetland). Later, the weather improved with temperatures rising to 25 °C at Strathallan (Highlands) on 14 August, but a band of rain moved north across the country on 17–19 August and Prestwick (South Ayrshire) recorded 57 mm on 18th.

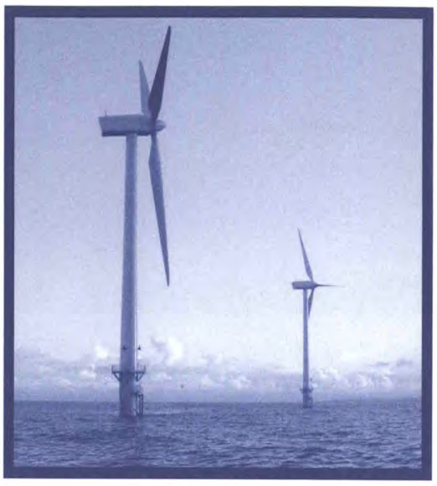
Northern Ireland experienced a more typical summer month but it was appreciably cooler than July with temperatures typically 17–20 °C. Frequent showery rain affected the Province throughout the month with downpours on 23 August and thunderstorms on 27th but, overall, despite the distinctly cooler feel it was the second warmest summer in Northern Ireland (only summer 1995 was warmer).

Courtesy of the Earth Simulator Center, JAMSTEC, Japan.

Understanding climate change

UK-Japan collaboration

A UK-Japan Climate Collaboration allows scientists from the UK to exploit the power of the Earth Simulator — one of the world's fastest supercomputers located in Japan. In return, several Japanese scientists have visited the Met Office Hadley Centre for extended periods to work on various climate science topics. In addition, the UK and Japan are working together to share information, collaborate on industry standards and set targets for energy appliances (e.g., through the Renewable and Energy Efficiency Partnership and the Energy Literacy Initiative). Using internships and other scholarships, students are also able to work and study in each others' countries.



Reviewing performance

The Business Management team was created in August as part of the reshape of Commercial Business by the new Commercial Business Director, Phil Johnston. The team provides essential internal cross-team support by helping to plan, monitor and review the performance of customer-focused teams. Through this and the sharing of marketing best practice, the Met Office is able to cut losses and maximise profits by focusing its efforts on profitable areas.

Met Office Consulting

The integrity of Met Office science combined with market sector understanding creates a unique offering to commercial areas such as the finance, insurance, utilities and health sectors. It is for this reason that Met Office Consulting was formed to take the application of weather and climate science and deliver consistently high results that benefit government and businesses in a changing world.

Investment

Our expertise in the renewable energy market was invaluable in helping a client to select the optimal site for a major investment in an offshore wind farm. Met Office Consulting provided an analysis of the wind profile together with future trends, enabling the investment house to calculate the optimum strategic decision.

Human Resources

To instil and develop a stronger customer focus and deliver people services to the Met Office in a more effective manner, a restructure of the Human Resources (HR) team was initiated. This included the creation of a front desk HR Services team supporting specialist HR staff and the development of a team of HR Business Partners, who will work on strategic people issues directly with individual business units at the Met Office.

September

Weather highlights

Many areas of England and Wales experienced the warmest September (using the areal series back to 1914) with temperatures exceptionally above average. Following a rainy start to the month, Margate (Kent) and Heathrow (London) both recorded 27.9 °C on 6 September. Clear and sunny weather prevailed and a particularly fine day in eastern England allowed temperatures to reach 30.2 °C at Heathrow on 11 September — the highest September temperature at Heathrow since 1949. The final part of the month was unsettled and dominated by low pressure, but with temperatures still mainly above average. Remnants of hurricane Gordon late on 21 September brought strong winds to western areas, with 69 mph recorded at St Mary's Airport (Scilly). However, most areas were very warm and sunny that day, with Sutton Bonnington (Notts) recording an unseasonable high of 29 °C.

Scotland also experienced the warmest September on record, although the month began with 46 mm of rain at Dundrennan (Dumfries and Galloway) on 2 September. A bright and sunny spell followed and daytime temperatures rose steadily, reaching 24 °C at Lossiemouth (Moray Firth) on 10 September. Most places experienced a wet day on 14 September with 38 mm of rain at Aviemore (Cairngorms) and 36 mm at Carterhouse (Borders). But very warm air accompanied by clearing skies advanced north-west on 21 September, with the temperature rising to 25 °C at Edinburgh. Overnight a small but intense depression moved north and brought gales to the west coast, with gusts reaching 76 mph at Barra (Western Isles).

There was a similar pattern to the weather in Northern Ireland which also experienced a record-breaking warm month. A maximum of 24.8 °C was reached at Killowen (Co. Down) on 5 September. Unsettled weather returned on 11–15 September with periods of rain which were locally heavy and thundery. Some cool nights also occurred and, on the morning of 16 September, the temperature fell to 0 °C at Katesbridge (Co. Down) — the lowest value of the month. But the evening of 21 September brought the most dramatic weather when the remnants of hurricane Gordon swept northward across the region. Gusts of 60–70 mph caused widespread tree damage and over 100,000 homes lost power. A one team communications plan was adopted to manage this event and contacts were made with forecasters at Met Eireann, particularly given the risk of damaging winds at the Ryder Cup venue in Ireland. Another ex-hurricane, this time Helene, brought strong to gale force winds on 27 September but, overall, Belfast's mean monthly temperature of 14.7 °C beat the record of 14.5 °C which had stood since 1941.

Understanding climate change

Future European heatwaves

Research by the Met Office Hadley Centre released this month shows that European heatwaves are likely to become 4–10 °C hotter and much more frequent during the course of this century. A paper published in the Journal of Climate states that extreme summer temperatures are expected to increase if atmospheric CO_2 concentration doubles as it is expected to over this period. North and South America and East Asia are likely to be affected as well as Europe. In the UK, severe heatwaves lasting five days or more, such as occurred this month, now happen approximately once every 20 years. By 2100, the new research shows such heatwaves are likely almost every year and could even occur several times each summer.

Keeping track

Climate variability scientists at the Met Office revealed this month that the extended summer period (May to September) was the warmest in the Central England Temperature record that dates back to 1659. The mean temperature of 16.2 °C for the period was 2 °C warmer than the average for 1961–1990. The previous record of 15.9 °C was set in 1947. The 2006 period included the warmest month ever, July, and a record temperature for September.

Approaching winter

There was a shift from the early signal, issued by the Met Office in July, which suggested that winter 2006/7 would be milder-than-average and wetter than the previous year. An update to the forecast issued this month as more forecast data became available and indicated near-average temperatures and an approximately even chance of wetter or drier-than-average conditions for the winter season ahead. The Met Office once again hosted a briefing event in London to help delegates who deal with risk planning understand the forecast and its implications.

Primary guidance

From this month, the North Atlantic European (NAE) model replaced the UK Mesoscale (MES) model as primary guidance in preparation of the Met Office 24-hour forecast. The NAE has the same grid length as the MES but covers a larger area including parts of the North Atlantic where storms develop which later affect the UK.

Radio weather

Independent Radio News (IRN) currently provides over 200 radio stations with news, sport and finance content. The Met Office secured a new three-year contract with IRN this month for the provision of 'rip and read' radio scripts and web-based weather content, including severe weather warnings. The Met Office team works across the Public Weather Services and Commercial areas to provide a one-stop tailored solution for all 200 independent radio stations.

New GRIB products

Teams from across the Met Office have been successfully working this year to design, develop and implement global forecasts of icing, turbulence and cumulonimbus clouds to meet a new International Civil Aviation Organisation requirement for World Area Forecast Centre services. The work on these new Gridded Binary (GRIB) products was completed in the autumn and the forecasts are now being made available to the aviation community on a trial basis.

SOA Prototype

An end-to-end prototype for Service-Oriented Architecture (SOA) was delivered this month. It clearly demonstrated that SOA has immense potential to revolutionise the Met Office's production and delivery processes, not only by reducing the ongoing support costs but also by enabling much quicker development of new products. Future work will be carried out in the SOA Foundation project in 2007.

Storm Tide Forecasting Service

Following a successful pilot, the Environment Agency agreed this month to a proposal to increase the area of responsibility for the Storm Tide Forecasting Service to cover Scotland. Warnings were issued to the Scottish Environment Protection Agency for 27 locations in Scotland from November 2006.

October

Weather highlights

An unsettled start to the month in **England and Wales** brought some heavy and thundery showers with 32.4 mm of rain at Capel Curig (Gwynedd) on 1 October. A tornado was also reported near the south-east coast of England that day. Temperatures were, however, exceptionally above average with a high of 19.1 °C recorded at Marham (Norfolk) on 2 October. The warm theme continued with winds from between the south-east and south-west helping the temperature up to 20 °C across large areas of England and Wales and a maximum of 21.6 °C at Pershore (Worcestershire) on 10 October. Temperatures slowly fell over the remainder of the month but were still above average. The Storm Tide Forecasting Service was particularly active over the period 5–12 October as exceptional spring tides combined with spells of windy weather led to overtopping at a number of locations in the West and South. Warnings were issued well in advance with a very high success rate.

This weather pattern was replicated in **Scotland** which also saw an unsettled start to the month and very wet weather in some areas. 30 mm of rain fell at Wick Airport, Altnaharra and Kinbrace (all Highlands) on 1 October but temperatures were well above average. Although there was plenty of sun, lighter winds and clear skies on 10 October led to an air frost for sheltered places and a minimum of -0.2 °C at Aboyne (Aberdeenshire). By 11 October, temperatures were in the range of 16–18 °C — some 5–6 °C above average. However, the unsettled theme continued as torrential rain on 25–26 October brought 86.6 mm to Kirkwall (Orkney) and flooding at various locations in the north-east.

Northern Ireland also enjoyed a warm month but with heavy rain at times. Overnight rain into 11 October brought nearly 30 mm to Silent Valley in the Mournes. Despite the wet start, afternoon temperatures still managed to reach 16 °C and 12 October brought a big improvement with a fine and sunny autumn day in many areas and temperatures reaching 18 °C. Less settled conditions returned from 16 October with 49 mm of rain falling at Silent Valley on 25th and localised flooding affecting some areas.

Understanding climate change

Stern Review

This month was marked by publication of the *Stern Review on the Economics of Climate Change* towards which the Met Office Hadley Centre provided core scientific data. The Review focused on the impacts and risks arising from climate change, the costs and opportunities associated with tackling it, and the national and international policy challenge of moving to a low-carbon global economy. It was led by Professor Sir Nicholas Stern (Head of the Government Economic Service and former World Bank Chief Economist) and is the most comprehensive ever undertaken on the economics of climate change. It shows that there is real potential in terms of what relevant climate research can do, but this requires two things: investment in and co-ordination of the UK research effort. The Met Office has some of the best climate scientists in the world and continues to direct its efforts towards the findings of the Stern Review.

Wet winter

The early prediction of long periods of rain over west Scotland led to important liaisons with customers to warn them about the risk of flooding. Although spells of rainy weather are not uncommon in this part of the UK, the persistence and intensity of the rain this winter were unusual and the Met Office worked with the Scottish Environment Protection Agency to help minimise the impacts of flooding.

Satisfied customer

The Met Office provides a special forecast service to warn major airline operator bmi when it needs to de-ice its fleet of aircraft. Warnings are sent direct to ground staff or de-icing suppliers and, during critical weather situations, bmi staff receive telephone briefings from Met Office forecasters. Results from last winter, published this month, show that 98% of the forecasts issued to bmi were correct which in turn helped cut delays to passengers by more than 84%.

New technology

A revolutionary weather and climate satellite, MetOp A, was launched from Baikonur, Kazakhstan, on 19 October and is the first ever European meteorological polar orbiting satellite. Over time, the new onboard technology will help the Met Office improve its forecasts of the weather and climate change with more accurate readings of winds, temperature and humidity and monitoring of the greenhouse gases responsible for climate change.

Future-proofing

Met Office Consulting was integral to the decision making of an international property company regarding the vulnerability of its portfolio to climate change. The ability of the Met Office to deliver specific, targeted intelligence on climate change enabled smart decisions to be made on the investment and geographic strategy of the company. The changing environment over the next 20 years creates significant liability issues across infrastructure portfolios and Met Office Consulting is well-placed to guide decision making in this area.

All in the name

The Met Office NAME model primarily supports the emergency response to toxic releases. It has also been applied successfully to the spread of animal diseases. Following outbreaks of Bluetongue disease in Belgium, a forecast service for the midges that carry the disease was quickly put in place at the Met Office.

Business Southwest

It is Met Office policy to support the local economy by using local suppliers wherever possible. This month, the Met Office took part in a *Meet the Buyer* event organised by Business Southwest, designed to inform local companies how to become a preferred supplier.

Party conferences

Met Office experts attended the annual conferences of the Labour, Conservative and Liberal Democrat parties and the Scottish National Party in September and October. Our main focus was on climate change and the Met Office's capability in studying its causes and effects. It also promoted our consultancy service that guides government and businesses on the risks and opportunities that climate change will bring and how to adapt. In addition, we produced bespoke information sheets on our services in Scotland and Wales for events at the Scottish Parliament and the Welsh Assembly.

House in order

To ensure good governance at the Met Office we created an Assurance team this month which, amongst other duties, is responsible for risk management and business continuity planning at the Met Office. In addition, we brought together all processes into a single, user-friendly electronic repository — the Business Management System — launched in February 2007 and accessible to all staff.

Spring tides

The Environmental Monitoring and Response Centre at the Met Office was praised this month for its excellent Storm Tide Forecasting Service performance during the October spring tides which coincided with some surge activity resulting in 149 alerts being raised in six days (more than the total raised in 2003/4). The false alarm rate, lead time and skill scores all showed we significantly exceeded our targets.

November

Weather highlights

Sunshine levels in **England and Wales** were exceptionally above average this month, with mean temperatures completing a record-breaking autumn for warmth. Rainfall totals were generally close to or above average. Early high pressure brought some sharp overnight frosts, with Benson (Oxfordshire) falling to -5.2 °C on 2 November and Sennybridge (Powys) -6.6 °C on 3 November. But there was also plenty of sunshine with Torquay (Devon) reaching 15.7 °C on 5 November. Temperatures generally remained high for the time of year until an unsettled spell on 16–19 November brought frequent heavy rain or squally showers and strong winds. Brockenhurst (Hampshire) recorded 17.4 mm of rain in an hour on 17 November and there was a 57.5 mph gust over the south coast the same day. As the month progressed, it became steadily colder with frequent spells of heavy rain or showers and a tornado was reported in Hampshire on 25 November.

Scotland also experienced a record-breaking autumn with above average temperatures. However, some areas also recorded well over double the average rainfall. The rain became more extensive and widespread from 7 November as a cold front moved south when Aberdeen saw a daytime maximum of only 4 °C. A deep Atlantic low pushed further weather fronts into the country from 12 November, bringing more cloud and persistent heavy rain. On 15 November, 34 mm fell over Glasgow Bishopton which recorded a monthly total rainfall of 301 mm. A transient ridge brought a rare dry day on 16 November but the rain soon returned, persistent and heavy, with Glasgow recording 57 mm on 30 November and severe gales over the Hebrides and the west coast.

It was a similar story in **Northern Ireland** — above average rainfall and sunshine. A particularly cloudy and wet day on 15 November saw 36.6 mm of rain fall at Killowen and 24.6 mm at Katesbridge (both Co. Down). 23 November was particularly windy with a gust of 52 knots measured at Killowen. A mild spell of weather from 25–29 November brought sunny spells and scattered showers and temperatures reached 13 °C. However it soon turned wet as well as windy with Ballykelly (Co. Londonderry) reporting gusts of up to 51 knots on 30 November.

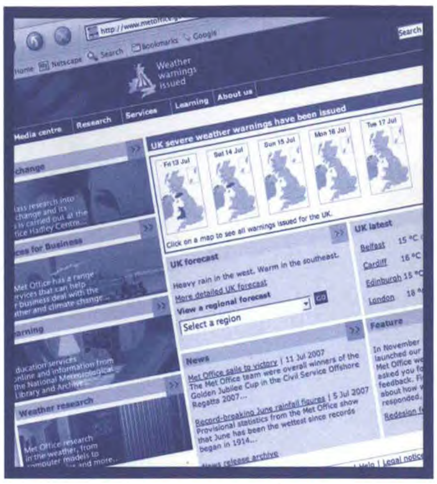
Understanding climate change

COP 12

Met Office Hadley Centre scientists attended the twelfth Conference of the Parties (COP 12) session this month which was hosted by the United Nations in Nairobi. Although the proceedings were largely policy-related and attended by governments around the world, many side events took place and the Met Office Hadley Centre concentrated on the *Effects of Climate Change on Developing Countries*, producing a brochure and delivering a talk. Its research focused on where worldwide damage to the environment could be most acutely felt. For example, extreme drought is likely to increase from under 3% of the globe today to 30% by 2100 with Africa, South America and parts of South East Asia most at risk.

Long-range forecasting

The Met Office was designated a Long-Range Forecasting Centre by World Meteorological Organization (WMO) this month. The exceptional El Niño event of 1997/8 and the associated impacts across the globe (e.g. droughts in some regions, floods in others) brought the science of long-range forecasting into the spotlight. In fact, Met Office seasonal forecasts with global coverage were first placed on our website towards the end of this event in January 1998 and are now recognised (from our online survey) as one of the most informative and user friendly available. Nine Global Producing Centres put themselves forward to be recognised by the WMO and the Met Office succeeded against Australia, Canada, China, France, Japan, the Republic of Korea, USA and the European Centre for Medium-Range Weather Forecasts.



Click on a map to see all warnings issued for the UK.

UK forecast

Heavy rain in the west. Warm in the southeast.

More detailed UK forecast

View a regional forecast

News

Met Office sails to victory | 11 Jul 2007
The Met Office team were overall winners of the Golden Jubilee Cup in the Civil Service Offshore Regatta 2007...

Record-breaking June rainfall figures | 5 Jul 2007
Provisional statistics from the Met Office show that June has been the wettest since records began in 1914...

More on winter

In a further update to the forecast for winter 2006/7 (December to February), the Met Office predicted average or above-average temperatures across the UK, with rainfall also at average or above-average levels. There remained a signal later in the season for lower temperatures (relative to average) and an increase in the frequency of cold snaps.

Regional weather

The Public Weather Service (PWS) is helping authorities nationwide to safeguard the public by establishing a team of Advisors. Based in the regions, the PWS Advisors' role is to help public authorities make the most of weather forecasts and warnings from the Met Office and, in particular, to assist the emergency planning community in protecting the public under the framework of the 2004 Civil Contingencies Act. The ten Advisors have elicited an enthusiastic response from authorities nationwide, providing crucial advice in advance of the severe storms that affected many parts of the UK during the winter.

Success in Scotland

The Met Office was awarded a 15-month contract with Scottish Television (STV) this month, covering the Northern and Central regions, for the provision of television weather services. Following a successful rebranding exercise, STV was keen to refresh its TV weather bulletins using new graphics. The Met Office redesigned the on-air look of STV weather and is now scripting and producing the highly popular sponsored bulletins.

Website wonders

The new look Met Office website at www.metoffice.gov.uk went live this month after some improvements. While a cross Met Office group reviewed the site's design and content, colleagues in the technology department enhanced its ability to withstand machine failure. Changes to the weather forecast pages include even more useful weather information and severe weather warnings. As the weather varies over the day, users can access the latest forecast and see if and when severe weather is expected for their area. Also indicated is the likelihood of disruption caused by the unfolding weather events and advice on what to do. Feedback on these improvements has been overwhelmingly positive.

Customer-Supplier Agreements

In order to further define its outputs for customers in Defence, the Met Office, with staff from Ministry of Defence HQ and the Front Line Command HQs, visited ten (military) stations in the UK and Germany to talk with staff, hear first-hand what is needed and convey this in Customer-Supplier Agreements. In a joined-up approach, these events brought together staff from the Met Office with military staff from the visited and nearby stations.

Well-being survey

In response to issues raised in our 2006 Employee Attitude Survey, we introduced the WELLCheck online survey, which provides all staff who wish to use it advice and guidance on a range of personal health issues. It also helps us to understand how staff feel about their work environment to complement our Employee Attitude Survey. This proved extremely popular, with almost three-quarters of our staff completing the survey.

Re-certified

First gained in March 2005, the Met Office retained certification this month of its Environmental Management System to ISO14001. We also successfully passed the mandatory three-year re-certification to ISO9001 which assesses our business processes, and TickIT (or ISO9001 standards applied to our IT related activities).

Climate Change Group

Met Office Hadley Centre scientists presented to the All Party Parliamentary Climate Change Group this month on the COP12 topics *Climate Change Impacts on the Developing World* and *Stabilising a Changing Climate* following the United Nations' conference in Nairobi.

Technology Reform

The Technology Reform implementation plan was approved by the Met Office Executive this month and is focused on increasing the reliability with which customers' technology solutions are delivered to time, cost and specification by concentrating on improving the skills and behaviours of staff.

December

Weather highlights

Unsettled conditions affected most of England and Wales early in the month, with strong to gale force south-westerly winds predominating. 3 December was particularly stormy with a gust of 78 mph recorded at Plymouth (Devon). Media attention focused on north-west London on 7 December as an active squall line spawned a tornado, which caused substantial damage to property. After a quieter period, mild, unsettled and often windy conditions returned with the strongest winds and wettest conditions affecting western areas. Shap (Cumbria) saw 56 mm of rainfall on 13 December, while 70 mph winds battered parts of northern England leading to a spate of overturned vehicles. Quieter weather returned on 19–26 December as a large, slow-moving area of high pressure formed over southern parts of the British Isles. However, this change of weather presented a new hazard in the form of thick and, in some places, freezing fog. Major disruption occurred at Heathrow and some of the regional airports as flight cancellations disrupted the Christmas getaway. The year ended with another very windy spell especially over northern England which disrupted many New Year celebrations. A gust of approximately 105 mph was recorded at Great Dun Fell in the north Pennines.

In Scotland the month opened with sunshine and showers and heavy rain in the west producing 40 mm at Tyndrum (Strathfillan) during 2 December and a further 87 mm overnight. The river Tay burst its banks and by 13 December, which was an exceptionally wet day, widespread flooding had been reported in the west and Central Highlands. Christmas Day was generally cloudy with some mist and patchy fog. However, the north-east was mainly clear and frosty, with Aboyne (Deeside) falling to around -9 °C. Gale force, westerly winds over the Central Belt saw in the New Year with 87 mph measured at Machrihanish (Kintyre). This was one of three potentially damaging severe gale events highlighted in an Early Warning, and some major outdoor events were cancelled as a result.

There was a cloudy, wet and very mild start to the month in Northern Ireland but this was replaced on 12 December by blustery showers with strong to gale force winds. A more settled period mid-month brought extensive mist and fog as well as frost which persisted until 20 December. Christmas Day was mainly cloudy with some mist and patchy light drizzle, but perturbed weather soon returned while heavy rain dominated New Year's Eve with gusts of 70 mph at Orlock Head (Co. Down) and Ballykelly (Londonderry).

Understanding climate change

Independent review

A detailed independent review of the last six years of the Met Office Hadley Centre programme was commissioned this year by the Department for Environment, Food and Rural Affairs (Defra) and the Ministry of Defence (MoD). An expert panel visited the Met Office this month to speak with staff and initiate the review, which included consultation with stakeholders and collaborators, analysis of papers and citations and comments from an international panel of distinguished scientists. By February 2007 external consultants (Risk Solutions) had delivered a very positive detailed report to Defra and MoD which is due for publication soon. The expert panel noted that "it is beyond dispute that the Hadley Centre occupies a position at the pinnacle of world climate science, and in translating that science in to useful policy advice".

©Steve Hall

Fog event

Thick and, in some places, freezing fog late this month caused major problems at Heathrow (London) and some regional airports as flight cancellations disrupted the Christmas getaway. Accurate prediction of the persistence and eventual clearance of the fog helped airlines and the British Airports Authority plan to clear the backlog.

Forecast services online

Transport Scotland's revised information portal at www.trafficscotland.org was officially opened to the public this month. Met Office weather forecast services continue to be one of the most important inputs to this public information site, with the weather pages receiving a large volume of hits during the recent run of heavy rain and high wind events. Building on last winter's service, the same Met Office information input is being utilised by a parallel site for freight traffic. The service ran continuously until 30 April 2007, funded by Transport Scotland.

Scottish thank you

The Head of Flood Warning at the Scottish Environment Protection Agency (SEPA) took time out to state his thanks to Met Office staff for our timely and accurate advice during the recent run of heavy rain events across Scotland. Over the month, there had been close co-operation between the Met Office and SEPA communications teams to ensure a consistent message to the media.

Chasing storms

Many important weather phenomena, including thunderstorms, are too small to be resolved by conventional forecast models. A prototype version of a new 'thunderstorm resolving' model was made available for trial use by Met Office forecasters from this month following successful tests. Due to limited computer resources it can only be run for a small area at one time so forecasters choose which area of the UK to run for a given day.

Road customer workshops

Four road customer workshops were run during the winter to reassess the changing customer requirements for services which assist operational decision-making associated with road gritting during the winter months. It was clear from these, and the new Highways Agency requirements that in the future there will be more emphasis on making road gritting more efficient, and, as a result, higher resolution temperature forecasts along a route will be required, as opposed to the current area forecasts that are being used. New services are being developed which will be launched next winter to meet these requirements.

Improved sea-surface temperature analyses

New operational, daily, global Ocean Surface Temperature and Sea-Ice Analyses (OSTIA) are being generated on a 5 km grid. These exploit both microwave and infrared satellite measurements and are more accurate and detailed than the previous analyses. They are already being used widely internationally and in the Operations Centre, and should improve Numerical Weather Prediction forecasts.

NEMO-based forecasts

All Met Office ocean modelling activities are transitioning to use the NEMO code in line with the UK-wide ocean modelling strategy (agreed in January 2006). NEMO has proven to be suitable for climate simulations and recent work has demonstrated its suitability for operational ocean forecasting. NEMO is enabling improved collaboration with European groups and will reduce maintenance and development costs.

Happy Christmas WaterAid

At Christmas 2006, for the third consecutive year, the Met Office encouraged staff to send an electronic Christmas card instead of a paper one to their customer and supplier contacts. As a result £2,500 of the money saved was donated to WaterAid — an international charity dedicated to the provision of safe domestic water, sanitation and hygiene education to the world's poorest people.

January

Weather highlights

The New Year was welcomed by windy and showery conditions with Land's End (Cornwall) recording gusts of up to 60 mph on 1 January. Temperatures were above normal for the time of year — it was the warmest January since 1916 and the second warmest in the areal series (back to 1914). The wet and windy weather persisted until 18 January when strong winds became widespread causing damage and destruction to many areas of England and Wales. Gust speeds reached 100 mph at Capel Curig (Snowdonia), 90 mph at Lake Vyrnwy (Powys), 81 mph at Rhyl (Denbighshire) and 76 mph at Swansea. An Early Warning was issued for this event three days in advance, with subsequent regular updates supplied to our customers. A colder spell ensued on 20–25 January when sleet and snow pushed south over many parts. But there was a settled end to the month with dry but cloudy conditions and just occasional patches of light rain. Temperatures rose again to be generally above normal.

Scotland also saw an unsettled start to the year with a mixture of bright, sunny or clear spells and showers. On 12 January, temperatures reached 15 °C in Aberdeen, winds gusted to 89 mph at Lerwick (Shetland) and around 50 mm of rain fell at Tyndrum (Strathfillan). The windy conditions persisted with gusts to 83 mph at Sella Ness (Shetland) on 15 January and 75 mph at Rosehearty (Moray Firth) on 19th. From 21–25 January a wintry spell of weather covered parts of Scotland with heavy snow. The morning of 25th was particularly frosty with Dalwhinnie (Highland) dipping down to -7.1 °C. Milder weather returned at the end of the month with 14 °C recorded at Dyce (Aberdeenshire) on 31 January.

A similarly unsettled spell of weather greeted the New Year in Northern Ireland with a mixture of bright, sunny or clear spells with showers. Of note was a 51 mph gust at Castlederg (Strabane) on 3 January and heavy rain on 7th when St Angelo (Co. Fermanagh) reported 26 mm of rain, followed by another 28 mm on 8 January. Gales or severe gales affected the Province at times with 70 mph recorded at Ballykelly (Londonderry) on 12 January. Again, winter made its presence felt with overnight frost on 24 January leading to temperatures dipping to -4.1 °C at Castlederg; although temperatures did improve slightly towards the end of the month.

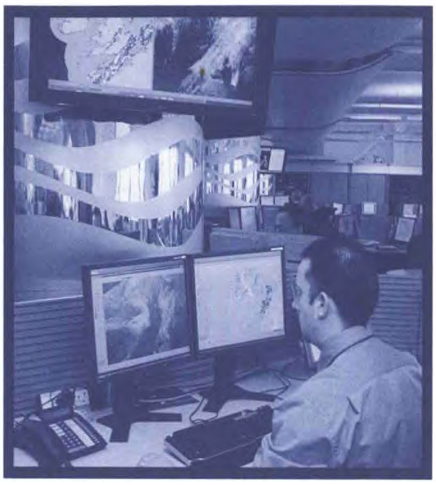
Understanding climate change

Highest ever global average temperature

Climate scientists at the Met Office Hadley Centre predict that 2007 is likely to be the warmest year on record globally, beating the current record set in 1998. Each January the Met Office, in conjunction with the University of East Anglia, issues a forecast of the global surface temperature for the coming year. The forecast takes into account known contributing factors, such as solar effects, El Niño, greenhouse gases concentrations and other multi-decadal influences. Over the previous seven years, the Met Office forecast of annual global temperature has proved remarkably accurate, with a mean forecast error size of just 0.06 °C.

Climate change and nuclear industry

In a specially commissioned study, the Met Office Hadley Centre produced a report looking at the effects of climate change and sea level rises at British Energy's (BE) nuclear sites across the UK. This built on previous work completed in 2004 by the Met Office for BE across a smaller range of sites and used our regional climate models. The findings are based on a range of scenarios, including one with continuing high CO_2 emissions. In this case, by 2100 daily average summer temperatures are predicted to be up to 5–6 °C higher than now; precipitation up to 30–35% higher in winter but 40–60% lower in summer, and winds up to 10% stronger in winter. Using the same scenario, surge heights are predicted to increase by up to 1.7 metres at Sizewell, the most affected site, and 0.9 metres at Hinkley Point, the least affected. Although this is the first stage of the study (in the second stage, an engineering consultancy will be looking at the effects of the climate changes on the coast), the preliminary picture is clear and these predictions now form an important part of BE's characterisation of its sites.



Strong winds

The precise forecast of strong winds and accurate prediction of maximum gusts early this month meant that customers benefited from Early Warnings of at-risk areas. The public was kept up to date with the forecast and the potential for more disruption through the media and Met Office website.

Single European Sky (SES) certification

Following an audit by the Civil Aviation Authority (CAA) this month, the Met Office was awarded a certificate to operate as an Aviation Met. Service Provider anywhere in Europe under new European Union SES legislation. In addition, as allowed by the legislation, the Met Office was designated by the CAA as the sole provider of ICAO Annex 3 met. services in the UK. The certification will open up new business opportunities for met. service provision in Europe from 2010/11 onwards when European airspace starts to be rationalised into Functional Airspace Blocks.

Special Ops

The Met Office officially opened a new look Operations Centre at its Exeter headquarters this month. The ceremony was attended by Met Office Chairman, Robert Napier, who commended the changes. The 'Ops Centre', as it is known among staff and customers, is key to many Met Office products and services. Following a programme of centralisation it accommodates highly-trained forecasters – experts in producing the world-class weather forecasts for which the Met Office is renowned.

New satellite data

The use of satellite data in the initial state is critical to the accuracy of Met Office forecasts. Radiances measured by the microwave sounding instrument onboard MetOp A – Europe's first polar orbiting weather satellite – were incorporated into the Unified Model in record time following initial availability from the satellite. Benefits were seen immediately in one and two-day forecasts from the Met Office.

Improving customer service

A customer service action plan was developed this month to enhance customer service across the Met Office, from requirements capture to final delivery. This plan will be implemented over the next 18 months and the improvements will ensure that the Met Office continues to deliver in line with customer expectations and is responsive to their needs.

Our premises

Our headquarters at Exeter was tested this month against the Building Research Establishment Environmental Assessment Method (BREEAM) which looks critically at the environmental impact of the premises each year. We surpassed our 'excellent' rating of 2005/6.

Technology Strategy

The latest Technology Strategy was endorsed by the Met Office Executive this month (as part of a wider Science and Technology Strategy). The document focuses on the business, technology and personnel drivers that will shape Met Office technology over the next 10 years and presents a strategy that seeks to maximise benefits while minimising cost and business risk. An implementation plan is now under development.

February

Weather highlights

There was a largely dry and settled start to the month in the British Isles with temperatures generally 2–3 °C above average across England, Wales and Scotland and 1–1.5 °C above average across Northern Ireland. However, in England snow spread widely north-eastwards on 8–9 February with 10 cm accumulating in places and maximum temperatures only just climbing above freezing. A consistent signal from our computer models for significant snowfall gave forecasters sufficient confidence to ssue an Early Warning well in advance. Guidance for this event proved to be extremely accurate and evidence would suggest that mitigation procedures were highly beneficial to the country as a whole. Many areas of Wales had significant snowfall of 10–15 cm on 8–14 February before milder air pushed n. Temperatures were soon back to above average with parts of north Wales reaching an exceptionally mild 14 °C on 8 February and London reaching 13.3 °C on 16th. Showers dominated towards the end of the month with some heavy bursts affecting England and Wales, but temperatures remained well above average with north Wales recording a maximum temperature of 14–15 °C on 27 February.

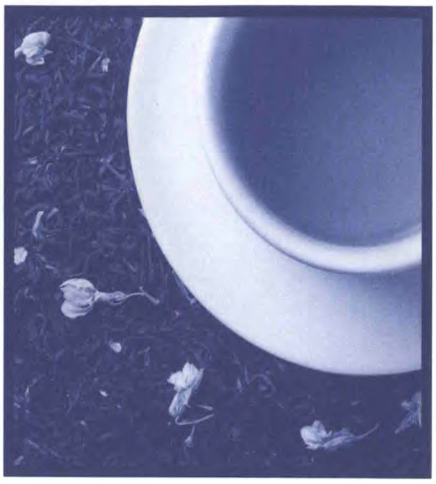
In Scotland, Dyce (Aberdeenshire) reached 15 °C on 1 February but, in contrast, severe night frosts caused temperatures to drop to -8.6 °C at Eskdalemuir (Dumfries and Galloway) on 6 February and -10.7 °C at Altnaharra (Highlands) on 8 February. Sleet, hail and snow showers affected northern and eastern parts, with further wintry showers on 9 February. Significant amounts of rain fell on 11 February and was heaviest in the north-east, with Fyvie Castle (Aberdeenshire) recording 41.8 mm in 24 hours. 15 February was also very changeable with 12 °C reached in the Moray Firth, 41 mm of rainfall recorded at Tyndrum (Strathfillan) and a gust of 76 mph at South Uist. The mild, wet and windy theme continued so that by 27 February temperatures reached 13.5 °C at Machrihanish (Kintyre) and 47.7mm of rain fell at Kinlochewe (Highlands).

In Northern Ireland temperatures were also above average for the time of year, despite a cool start to the month with Katesbridge (Co. Down) dipping to -6 °C on 3 February. Fog also persisted until 5 February and snow showers gave a few centimetres of snow to the north coast on 6th, but otherwise it was largely sunny and dry. Overnight temperatures dropped to -8 °C at Castlederg (Strabane) on 7 February but a rainy period raised temperatures to 10 °C by 12th. This was followed by more wet and windy weather on 15 February with a gust of 61 mph recorded at Orlock Head (Co. Down). Fog returned on 18 February but cleared much faster as it was replaced, once again, by mild weather with temperatures reaching 14.6 °C at Newry on 27 February.

Understanding climate change

IPCC Fourth Assessment Report

The Intergovernmental Panel on Climate Change (IPCC) published the first part of its long-awaited Fourth Assessment Report this month, which drew together all the major climate research from around the world and provided new and indisputable evidence on climate change. The first instalment (Working Group I) set out the science behind climate change, while further releases planned for April and May 2007 looked at who and what will be vulnerable to the effects of climate change (Working Group II) and assessed options for mitigating it (Working Group III). Scientists at the Met Office Hadley Centre played a prominent role in producing the Working Group I report, providing lead authors and review editors, and represented the IPCC in Paris prior to the launch of the report to finalise wording.



Snow

An outstanding, near perfect result in forecasting the snow event on 8 February enabled the delivery of excellent advice to customers and the public. As well as the standard day-to-day contact with customers, Met Office staff discussed the situation with organisations including the Cabinet Office, the Highways Agency and the Environment Agency. Unfortunately, we were not able to provide much advance notice of precise timings for the snow event over Wales on 9 February, showing the uncertainty of some severe weather events.

More visitors

The capacity of the Met Office website was increased this month so that it is able to handle more visitors. From a previous peak of 2 million page impressions per day, the site can now handle 6 million impressions per day.

Broadcast warnings

To ensure business continuity was maintained and additional broadcast requirements fulfilled throughout the spell of wintry weather this month, a contingency plan was activated. This saw rostered and additional broadcasters made available at the BBC to meet its fast-changing requirements during this high-profile news event.

Winter warmer

Figures released by the Met Office this month show that winter 2006/7, with a mean temperature of 5.47 °C, was the second warmest on the UK national record dating back to 1914. All three winter months recorded above average temperatures, with January 2007 also the second warmest on record at 6 °C. In England, the warmest winter in the Central England Temperature (CET) series remains 1869, with a mean temperature of 6.77 °C. The figure for winter 2006/7 is 6.4 °C, placing it fourth in the series. The south of England recorded its warmest ever winter with a mean temperature of 6.53 °C, beating the previous high of 6.49 °C set in 1989/90. Rainfall figures show most areas of the UK to have been very wet with only Northern Ireland recording figures close to average.

Unified Model

The National Met. Services of Norway and South Africa signed collaboration agreement with the Met Office this month to use the Unified Model for their operational, public duty tasks. Both Services developed multi-year research and development programmes which will examine very high resolution runs; improve parameterisation of surface processes; study the impact on extreme winds from forcing by members from an ensemble; examine convective precipitation parameterisation; and identify possible systematic errors from high resolution verification.

Commodities

Met Office Consulting delivered a major tea importer the ability to mange risks to supply caused by seasonal variability and the impacts of El Niño. Understanding weather and climate science, applying market sector expertise and creating market intelligence enables the Met Office to inform the short-term spot market and long-term strategic buying decisions of this commodity trader.

METCEN

A report was published this month by QinetiQ exploring the concept of bringing together operations at the Fleet Weather and Oceanographic Centre in Northwood with the Met Office at High Wycombe. These two centres may be merged to form a coherent Meteorological Support Headquarters for Defence (or METCEN for short) with the forecasting production unit most likely based at the Met Office, Exeter.

Weather and climate news

The Chief Advisor to Government launched a new briefing service for MPs this month. ‘Weather and climate news’ is a quick and easy digest about the weather, climate change and the environment, emailed to MPs every three months. It provides a flavour of the Met Office’s key Government activities and briefs recipients on the issues of the day. Special bulletins, in response to media coverage on climate change for example, are issued when appropriate and the service has been very well received.

Integrated Development Environment

The final stage of this business critical project to deliver a new suite of development tools and processes was approved this month. This was on the basis of demonstrated and significant improvements to the efficiency of development delivery which is on track to provide 8.5% of efficiency savings by March 2008.

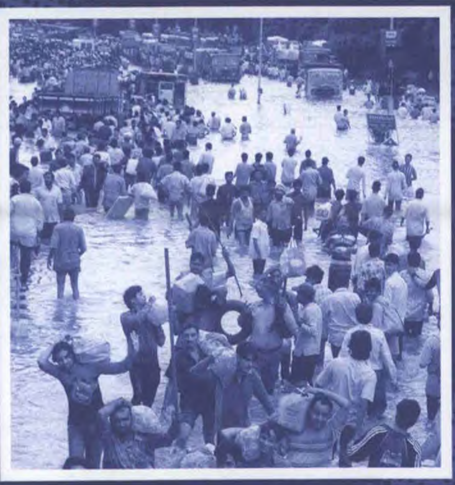
March

Weather highlights

The first week of March was unsettled in England and Wales with bands of rain and strong winds, but it was generally mild. London reached 17 °C on 11 March and 19 °C was measured in Norfolk on 12 March. But it turned colder from 15 March and a strong northerly flow had developed by 20th, with 2 cm of lying snow reported at Wattisham (Suffolk). In Wales, a cold front scattered 10 cm of snow across the Brecon Beacons on 19 March and there were further light coverings on the east coast of England on 21 March. High pressure for the remainder of the month brought overnight frosts with -2 °C recorded at Keswick (Cumbria) on 23 March. This was followed by a mild 13 °C by day in Plymouth (Devon), while at High Wycombe (Buckinghamshire) the maximum temperature was only 5.8 °C. This weather pattern was repeated on 26 March with -2 °C recorded overnight at Odiham (Hampshire) and 17 °C by day at the Solent and continued on 27 March when -2 °C was recorded overnight at Yeovilton (Somerset) and 19 °C by day at Herstmonceux (East Sussex).

Scotland experienced similar weather patterns with many places reaching 12 °C on 7 March despite heavy and persistent showers and strong winds. Aberdeen reached 15 °C on 10 March. It was particularly windy on 18 March with a gust of 94 mph recorded at Foula (Shetland). However, there was a return to sunnier weather later in the month when 16 °C was reached at Kinlochewe (Highlands) on 27 March and 17 °C at Dalmally (Argyll) on 31st. Elsewhere, temperatures ranged from 7 °C in the Borders to 11 °C in Strathallan (Highlands) but were still above average for the time of year.

Temperatures were also mostly above average in Northern Ireland where the month started wet and windy. It was also very mild with a temperature of 13 °C recorded in Belfast on 10 March. Much colder conditions on 18 March brought heavy and blustery showers with temperatures reaching around 5–6 °C. After a chilly day, with Belfast Aldergrove reaching just 6.3 °C on 29 March, a return to bright and sunny weather brought a fine end to the month and 15 °C on 31st.



Understanding climate change

Defence and security implications

Climate scientists at the Met Office Hadley Centre are helping the Ministry of Defence (MoD) determine the different impacts of climate change, particularly on the performance and endurance of its personnel and equipment. A recent global study *Defence and Security Implications of Climate Change* looked at the environmental stresses brought about by an increasingly warmer world. These include drought, flooding, changes in crop yield and water resources and, amongst other considerations, the MoD expects to assist in more humanitarian operations as hunger, thirst, disease and conflict escalate and result in climate refugees.

Unified Model
The Unified Model is the model of choice for the Australian Community Climate and Earth System Simulator project, and a similar but significantly larger programme has been developed together with the Australian Bureau of Meteorology and the Commonwealth Scientific and Industrial Research Organisation. The Met Office was in the final stages of negotiation this month, which will lead to a collaboration agreement with both organisations.

Military Electro-Optical workshop
The Met Office, Exeter, hosted a successful two-day workshop this month on optimising 'electro-optical' system performance, raising awareness of the guidance it can provide the Ministry of Defence to aid tactical decision making. The workshop contained information of a classified nature – a first for the Met Office – requiring additional on-site security.

Evolving needs
EDF Energy approached Met Office Consulting this month to help it define what is expected of the weather and climate in the future and the risks and opportunities it may bring to the energy industry. This project shows how Met Office expertise is needed in the commercial world and how the challenging questions that the commercial world is asking is leading to new science and services.

Multi-year agreements
Work was completed this month on multi-year agreements between the Met Office and key defence customers. Setting a precedent, the agreements define the long-term provision of services to the operational areas including Air Command (which merged the former Personnel and Training Command and Headquarters Strike Command) and Land Command (including merger with HQNI) and introduced Incentivised Pricing to the operational customer group.

Innovative Service Award
The Health Forecasting team, part of the wider Met Office Consulting team, won the Innovative Service Award at the annual Health and Social Care Awards this month. The team's Chronic Obstructive Pulmonary Disease Health Forecasting service won the award which recognises innovative, new or improved services that benefit the delivery of healthcare for patients, users and carers.

Focus on water
To mark World Water Day (22 March) and World Met Day (23 March), the Met Office hosted an event at its Exeter headquarters for local dignitaries and businesses to raise awareness of environmental sustainability and climate change with a focus on water. The event was jointly organised by the Met Office, Environment Agency and South West Water and raised £700 for WaterAid.

New aviation web product range
Following several years of customer consultation, design and development, three new web tiers on the Met Office Aviation web pages have been launched. They offer a detailed weather briefing service aimed at UK airports, Air Traffic Control, airline pilots and operation managers.

MSC Napoli
Met Office, Aberdeen, worked closely with the Maritime and Coastguard Agency providing five-day site-specific forecasts twice a day for the MSC Napoli beaching site offshore Branscombe (Devon). Met Office Oceanographers also set up a high resolution ocean model for Lyme Bay (Dorset), nested into larger scale models covering the North West Shelf to advise the Department for Environment Food and Rural Affairs on the dispersal of sediment when the MSC Napoli was eventually raised. This required representation of wind-driven current generated both inside and outside Lyme Bay.

4 km UK wave forecasts
Wave forecasts for UK waters on a 4 km grid have been developed to take advantage of the high resolution wind forcing from the new 4 km UK NWP system. The forecasts provide more realistic detailed information such as shadowing by islands or headlands, and are being introduced into the operational suite later in 2007.

world-leader in
climate change
and weather
forecasting

Financial review

Dividend payable

A dividend of £6.7 million is payable to our Owner, the Ministry of Defence, in respect of 2006/7 (2005/6 £6.3 million). Both the 2004/5 and 2005/6 dividends were paid during the year.

Payment policy

We pay suppliers direct from the Met Office. Our policy is to pay within contracted payment terms or, without specifically agreed terms, within 30 days of receiving a valid invoice (see Better Payment Practice Code) or of the delivery date, if later. In 2006, we paid 99.55% of our bills on time (2005/06, 99.48%).

Treasury policy

Certain payments to international bodies in respect of international subscriptions and contribution to satellite programmes are paid in foreign currency. To manage the foreign exchange risk the Met Office policy is to buy forward foreign currency to meet these payments in accordance with anticipated payment profile. The Met Office follows Treasury rules by investing all surplus funds on deposit with the UK Debt Management Office at HM Treasury.

The Met Office has limited exposure to liquidity risk due to loan funding from the Ministry of Defence.

Further details of our derivatives and other financial instruments are contained in note 26 to the Accounts.

Cash flows and liquidity

Cash balances totalled £31.3 million as at 31 March 2007, an increase of £0.6 million when compared to 31 March 2006. Of this balance £1.0m comprised cash in transit at the year end (2005, £4.0m). Net cash inflow from operating activities was £31.3 million (2005, £35.7 million).

Total debtor balances decreased by £5.9 million compared to 2005. This was due largely to the receipt in April 2006 of the final instalment of sale proceeds relating to the disposal of our site at Shinfield Park, Reading, amounting to £11.7 million. Average debtor days rose from 40 days at 31 March 2006 to 45 days at 31 March 2007. Total creditor balances decreased by £18.8 million compared to 2005. This was largely the result of the settlement of deferred payments in respect of international subscriptions, payments made in respect of finance leases and dividend.

Disclosure of information to auditors

In accordance with the s234ZA of the Companies Act 1985:

- so far as the Accounting Officer is aware, there is no relevant audit information of which the entity's auditors are unaware, and
- the Accounting Officer has taken all the steps that he ought to have taken to make himself aware of any relevant audit information and to establish that the entity's auditors are aware of that information.

Performance against Key Ministerial Targets

Target achieved 🟩 Target failed ☐

	2001/2		2002/3		2003/4		2004/5		2005/6		2005/6	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
Targets met		5/6		3/6		6/7		3/6		5/5		4/4
Efficency index	111.0	120.1	120.55	118.40	120.1	121.0						
SQI	107.8	134.7	115.4	130.3	120.1	149.3						
Direct services growth:												
Government							4.1%	5.7%				
Non-Government							4.1%	0.0%				
Maintain profitability							7.9%	10.6%				
ROCE	>0.0%	2.1%	>0.0%	-3.4%	Av >4% for 04/2-03/7	1.4% (restated)	3.5% in-year 3.5% average for 04/4-03/9	7.6% 7.6%	3.5% in-year 3.5% average for 04/4-03/9	5.3% 6.5%	3.5% in-year 3.5% average for 04/4-03/9	4.0% 5.6%
Profit (before strategic investments)	£17.6m	£18.5m	£13.3m	£13.8m	£14.0m	£14.8m	£15.5m	£15.9m				
Strategic Investments	£15.9m +/- 1.5m	£15.1m	£19.4m +/- 1.5m	£18.9m			£6.3m +/- 0.5m	£6.4m				
Commercial contribution	£4.4m	£3.3m	£3.8m	£3.65m	£4.0m	£4.5m						
Profit on commercial services									£2.8m	£2.9m	£3.6m	£3.9m
NWP Index	105.2	107.5	109.5	110.0	111.8	112.5	113.9	113.7	114.9	116.0	118.5	118.5
Max temp accuracy									83.0%	83.0%	83.5%	84.6%
Min temp accuracy									78.0%	78.0%	79.0%	81.8%
Precip accuracy									0.855	0.855		
Use Brier Skill Score											0.345	0.349
Staff skills index		101.5		104.0	107.5	105.1						
Operational in Exeter					Sept 03	Aug 03						
Freedom of Information							Set up	Achieved				
Efficiency measure							Develop	Failed				
Customer-supplier Agreements with central government customers									Create and agree	Achieved		
Pricing mechanism for Defence									Establish	Achieved		
Costed output-based CSAs to all government customers											Introduce where agreed	Agreed
Incentivised pricing											Prepare for intro 01/04/07	Agreed
Baseline for 07/08 efficiency targets											Create	Agreed
Staff satisfaction benchmark									Establish	Achieved		

Key Performance Targets 2007/8

The following Key Performance Targets (KPTs) have been set for the Chief Executive of the Met Office and announced in Parliament for the financial year (FY) 2007/8. The targets are designed to drive continued improvements in the Agency's performance and are as follows:

KPT 1. Forecast accuracy

To achieve at least three out of the four following forecast accuracy measures. Any failed element will be required to meet the same level as the FY 06/07 outturn for the overall KPT to be met:

a. Improve the forecasting skill, using the combined Numerical Weather Prediction (NWP) Index, to at least 122.4.

b. More skilfully predict whether precipitation will occur, at selected locations, to achieve a skill score of at least 0.403.

c. Predicting maximum temperature at selected locations to within 2 degrees accuracy 84.8% of the time.

d. Predicting minimum temperature at selected locations to within 2 degrees accuracy 82.0% of the time.

KPT 2. Business profitability

To achieve a Business profitability target of £4.3 million.

KPT 3. Return on Capital Employed

In line with Treasury requirements to achieve a Return on Capital Employed (ROCE) of at least 3.5%.

KPT 4. Support to wider Government goals

To deliver the outputs of the Customer-Supplier Agreements (CSA) for Public Weather Services, Defence and Defra within the tolerances agreed with the customers and defined in the CSAs.

Report by the Comptroller and Auditor General on the Met Office's Statement of Performance against 2006/7 Key Performance Targets

The Chief Executive of the Met Office has asked me to validate performance against the 2006/7 Key Performance Targets (KPTs).

Respective responsibility of the Met Office, the Chief Executive and the Auditor

The Met Office and the Chief Executive are responsible for the measurement and reporting of the Trading Fund's performance against its KPTs.

I examine and conclude on whether the Trading Fund has:

- provided full details of performance against all the Met Office's KPTs;
- ensured that all performance information is reliable and fairly presented.

Basis of conclusion

The validation includes an examination, on a test basis, of evidence relevant to the amounts and disclosures of the outturns and achievements included within the Statement. It also includes an assessment of the significant judgements and methodologies made by the Met Office and the Chief Executive in the Statement's preparation.

Conclusion

The Statement of Performance opposite includes all the Met Office's 2006/7 KPTs and it reliably and fairly presents the Agency's performance against the KPTs. I have no observations to make on this Statement.

John Bourn
Comptroller and Auditor General
National Audit Office
157-197 Buckingham Palace Road
London SW1W 9SP
25 June 2007

Remuneration report

Remuneration policy

The members of the Met Office Executive are members of the Senior Civil Service with the exception of the Finance Director.

The remuneration of senior civil servants is set by the Prime Minister following independent advice from the Review Body on Senior Salaries.

In reaching its recommendations, the Review Body has regard to the following considerations:

- the need to recruit, retain and motivate suitably able and qualified people to exercise their different responsibilities;
- regional/local variations in labour markets and their effects on the recruitment and retention of staff;
- Government policies for improving the public services including the requirement on departments to meet the output targets for the delivery of departmental services;
- the funds available to departments as set out in the Government's departmental expenditure limits;
- the Government's inflation target.

The Review Body takes account of the evidence it receives about wider economic considerations and the affordability of its recommendations.

Further information about the work of the Review Body can be found at www.ome.uk.com.

The Finance Director and all other Met Office employees have their remuneration determined by a process consistent with HM Treasury Civil Service Pay Guidance. The Chief Executive has authority to determine pay and conditions for all Met Office employees, which are appropriate to its business needs and which take account of Government policies on Public Sector Pay. This delegation requires the Chief Executive to consult with the MoD, the Cabinet Office and HM Treasury and to gain their approval before negotiating any changes to pay and grading systems and arrangements with the recognised Trade Union. This is achieved through the Civil Service Pay Remit process. The Met Office Reward Strategy approved by the Chief Executive is designed to drive the behaviours required to deliver the Corporate Plan. The Met Office Reward Strategy enables its workforce to develop and grow its business to, as a minimum, deliver business outcomes and, as required by Cabinet Office, is consistent with the Civil Service Reward Principles. Further details of the Civil Service Reward Principles can be found at www.civilservice.gov.uk/management/performance/index.asp

Service contracts

Civil service appointments are made in accordance with the Civil Service Commissioners' Recruitment Code, which requires appointment to be on merit, on the basis of fair and open competition, but also includes the circumstances when appointments may otherwise be made.

Unless otherwise stated below, the officials covered by this report hold appointments which are open-ended. Early termination, other than for misconduct, would result in the individual receiving compensation as set out in the Civil Service Compensation Scheme.

Further information about the work of the Civil Service Commissioners can be found at www.civilservicecommissioners.gov.uk

Met Office Reward and Recognition Committee

The Reward and Recognition Committee is a sub-committee of the Met Office Board.

The members of the Reward and Recognition Committee are the Non-Executive Directors of the Met Office Board, together with the Director of Corporate Services. The Committee is chaired by the Non-Executive Chairman of the Met Office Board.

The purpose of the Committee includes the consideration and approval of the Met Office annual pay remit; consideration of distributions to employees under the Met Office Corporate Bonus scheme, based on an assessment of the performance of the Met Office against its Key Performance Targets and the level of declared profit.

The Committee also considers, if appropriate, whether Senior Civil Servants at the Met Office should either be included in the Met Office Corporate Bonus scheme or the wider MoD SCS bonus scheme, and subsequently:

- either to agree the bonus to be paid to Met Office Senior Civil Servants within the overall amount of money set for distribution under the Met Office Corporate Bonus scheme;
- or to review and approve the Chief Executive's recommendations on Met Office Senior Civil Servants bonuses to the MoD Pay Committee.

Salary and pension entitlements

The following sections provide details of the remuneration and pension interests of the Executive Directors of the Met Office.

Remuneration

(This information is subject to audit)

		2006/7	2005/6
Name	**Notes**	**Salary, including performance pay £ 000**	Salary, including performance pay £ 000
M Hutchinson Chief Executive		**90–95**	85–90
JFB Mitchell Chief Scientist		**80–85**	80–85
D Formby Director of Corporate Services and Chief of Staff		**65–70**	25–30 (65–70 full year equivalent)
S Noyes Operations and Customer Service Director		**80–85**	75–80
D Griggs Government Business Director		**70–75**	40–45 (65–70 full year equivalent)
A Dickinson Director of Science and Technology		**70–75**	35–40 (65–70 full year equivalent)
P Johnston Commercial Business Director (from 9 May 2006)		**85–90** (95-100 full year equivalent)	N/A
I Carlson Finance Director	1	**70–75**	50–55

Notes

1. I Carlson was interim Sales and Marketing Director for the period from 1 April 2006 to 8 May 2006. This position was within the Senior Civil Service and the full year equivalent was £70-75k. For the period 9 May to 3 December he was Deputy Director of Finance and Corporate Services being appointed Finance Director on 4 December. These positions were not within the Senior Civil Service and the full year equivalent was £60-65k.
2. No Director received any benefits in kind in either 2006/7 or 2005/6.

Pension benefits

(This information is subject to audit)

Name	Notes	Total accrued pension at age 60 at 31/3/07 and related lump sum £ 000	Real increase in pension and related lump sum at age 60 £ 000	CETV at 31/3/07 £ 000	CETV at 31/3/06 £ 000	Real increase in CETV £ 000
M Hutchinson		30–35 plus 90–95 lump sum	0–5 plus 5–10 lump sum	594	526	52
JFB Mitchell		30–35 plus 100–105 lump sum	0–5 plus 0–5 lump sum	772	718	22
D Formby		25–30 plus 80–85 lump sum	0–5 plus 0–5 lump sum	558	530	9
S Noyes		25–30 plus 80–85 lump sum	0–5 plus 0–5 lump sum	433	419	8
D Griggs		15–20 plus 55–60 lump sum	0–5 plus 0–5 lump sum	312	300	5
A Dickinson		25–30 plus 80–85 lump sum	0–5 plus 0–5 lump sum	623	587	10
P Johnston	1	0–5	0–5	19	–	15
I Carlson	1	5–10	0–5	50	40	7

Notes

1. All Directors, with the exception of P Johnston and I Carlson, have chosen the 'Classic' option of the new Principal Civil Service Pension Scheme. P Johnston and I Carlson have chosen the 'Premium' option; with the 'Premium' option lump sums cannot be commuted and are thus not shown. Further details of the new arrangements are disclosed within the accounting policy note.
2. No Director opted for a Partnership Pension Account.

Civil Service Pensions

Pension benefits are provided through the Civil Service pension arrangements. From 1 October 2002, Met Office employees, as civil servants, may be in one of three statutory based 'final salary' defined benefit schemes (Classic, Premium, and Classic Plus). Pensions payable under Classic, Premium, and Classic Plus are increased annually in line with changes in the Retail Prices Index. New entrants after 1 October 2002 may choose between membership of Premium or joining a good quality 'money purchase' stakeholder arrangement with a significant employer contribution (partnership pension account).

Employee contributions are set at the rate of 1.5% of pensionable earnings for Classic and 3.5% for Premium and Classic Plus. Benefits in classic accrue at the rate of 1/80th of pensionable salary for each year of service. In addition, a lump sum equivalent to three years' pension is payable on retirement. For Premium, benefits accrue at the rate of 1/60th of final pensionable earnings for each year of service. Unlike Classic, there is no automatic lump sum (but members may give up (commute) some of their pension to provide a lump sum). Classic Plus is essentially a variation of Premium, but with benefits in respect of service before 1 October 2002 calculated broadly in the same way as in Classic.

The partnership pension account is a stakeholder pension arrangement. The employer makes a basic contribution of between 3% and 12.5% (depending on the age of the member) into a stakeholder pension product chosen by the employee. The employee does not have to contribute but where they do make contributions, the employer will match these up to a limit of 3% of pensionable salary (in addition to the employer's basic contribution). Employers also contribute a further 0.8% of pensionable salary to cover the cost of centrally-provided risk benefit cover (death in service and ill health retirement).

The accrued pension quoted is the pension the member is entitled to receive when they reach 60, or immediately on ceasing to be an active member of the scheme if they are already 60.

Further details about the Civil Service pension arrangements can be found at the website www.civilservice-pensions.gov.uk

Cash Equivalent Transfer Values

A Cash Equivalent Transfer Value (CETV) is the actuarially assessed capitalised value of the pension scheme benefits accrued by a member at a particular point in time. The benefits valued are the member's accrued benefits and any contingent spouse's pension payable from the scheme. A CETV is a payment made by a pension scheme or arrangement to secure pension benefits in another pension scheme or arrangement when the member leaves a scheme and chooses to transfer the benefits accrued in their former scheme. The pension figures shown relate to the benefits that the individual has accrued as a consequence of their total membership of the pension scheme, not just their service in a senior capacity to which disclosure applies. The CETV figures, and from 2003-04 the other pension details, include the value of any pension benefit in another scheme or arrangement which the individual has transferred to the Civil Service pension arrangements and for which the Civil Service has received a transfer payment commensurate with the additional pension liabilities being assumed. They also include any additional pension benefit accrued to the member as a result of their purchasing additional years of pension service in the scheme at their own cost. CETVs are calculated within the guidelines and framework prescribed by the Institute and Faculty of Actuaries.

Real increase in CETV

This reflects the increase in CETV effectively funded by the employer. It does not include the increase in accrued pension due to inflation, contributions paid by the employee (including the value of any benefits transferred from another pension scheme or arrangement) and uses common market valuation factors for the start and end of the period.

Fees paid to Non-Executive Directors

Met Office Non-Executive Directors are not Met Office employees and are not members of the Principal Civil Service Pension Scheme.

Fees paid to Non-Executive Directors were as follows:

		2006/7 **£ 000**	2005/5 £ 000
R Napier	(from 1 October 2006)	**15–20**	–
C Brendish	(until 30 September 2006)	**0–5**	20–25
J May		**10–15**	15–20
B Hoskins		**0–5**	5–10
A Gammidge	(until 30 September 2006)	**–**	0–5
D Harker		**25–30**	40–45

Mr. Mark Hutchinson
Chief Executive
22 June 2007

Accounts

Statement on the system of internal control

1. Scope of responsibility

As Accounting Officer, I have responsibility for maintaining a sound system of internal control that supports the achievement of the Met Office's policies, aims and objectives, whilst safeguarding the public funds and departmental assets for which I am personally responsible, in accordance with the responsibilities assigned to me in Government Accounting.

The Met Office is a Trading Fund within the Ministry of Defence and as such is accountable to the Secretary of State for Defence. A new Framework Document setting out the purpose, vision, role and governance arrangements for the Trading Fund was agreed with the owner during the year. The Met Office Owner's Council (MOOC), which is chaired by the Under Secretary of State and which acts as the representative of our owner, convenes bi-annually (or as required) to review the performance of the Met Office against its Key Performance Targets and Corporate Plan objectives that are agreed by Parliament. The MOOC also advises and assists me with the management of major strategic risks. In addition the Audit Committee, comprising Non-Executive members of both the MOOC and the Met Office Board, and which reports to the Met Office Board, supports me in my Accounting Officer role.

2. The purpose of the system of internal control

The system of internal control is designed to manage risk to a reasonable level rather than to eliminate all risk of failure to achieve policies, aims and objectives; it can therefore only provide reasonable and not absolute assurance of effectiveness.

The system of internal control is based on an ongoing process designed to identify the principal risks to the achievement of departmental policies, aims and objectives; to evaluate the likelihood of those risks being realised and the impact should they be realised; and to manage them efficiently, effectively and economically. The system of internal control has been in place in the Met Office for the year ended 31 March 2007 and up to the date of approval of the Annual Report and Accounts, and accords with Treasury guidance.

3. Capacity to handle risk

Throughout the year, a project was run to streamline and improve the Met Office Business Management System (BMS) which contains the key business processes of the Met Office. A corporate risk management process, of which I personally am the Process Owner, is one of the key processes of the BMS. This process provides guidance to all staff involved in risk management activities and includes best practice guidance on managing risk in all Met Office activities but especially within projects, programmes and corporate risks. The Met Office Board and the Audit Committee have endorsed this process. All Directors and Programme Managers are personally accountable to me for the way in which risks falling within their jurisdiction are managed, and they all have the authority and resources to manage risks as part of their responsibilities, underpinned by training courses where required to assist in the management of operational risk on a day-to-day basis.

4. The risk and control framework

The Met Office Board has accepted the "Good Governance Standard for Public Services", which includes a commitment to manage risk effectively as an integral part of the decision-making process. The major corporate risks are identified through workshops and structured interviews with Directors and senior managers. These risks are recorded in the Corporate Risk Register. This is maintained by the Corporate Risk Manager and reviewed on a monthly basis by the Risk Committee (RRC). The Audit Committee oversees the operation of this process through representation on the Risk Committee, and through regular review of the Corporate Risk Register. The assigned risk owner, in conjunction with the Corporate Risk Manager, assesses the risks and identifies potential risk mitigation activities for agreement by the Met Office Board. The Board is also responsible for assessing the Met Office's appetite for risk; accepting that, as the Met Office expands its commercial trading it will need to take appropriate risks in some areas of business, which would not normally be necessary to deliver its traditional services to the public and to Government. Work is currently underway to ensure this commercial business ethos is appropriately reflected in our risk appetite. The Audit Committee reviews the risk management strategy adopted by the Met Office and, in particular, assesses the adequacy of the internal controls operating within all key processes in relation to risk identification, assessment, response and monitoring.

Maintaining continuity of services, especially those deemed critical by our customers, is always a high priority for the Met Office. The risks to services are continually monitored and action is taken to either prevent risk or mitigate its impact. Our business continuity plans are reviewed regularly and are exercised either in full or in part every six months. This year, in addition, we produced a plan for dealing with pandemic flu. The agreed pre-pandemic actions will be implemented during the next financial year. The Audit Committee also conducted a review of business continuity during the year.

During the course of the year we conducted our annual planning activity, resulting in an agreed 5-year Corporate Plan and associated detailed Operating Plans for all of our programmes. These are the vehicles by which we will deliver our owner's requirements for creating value, providing services to central government and the public, and competing effectively in the commercial market, whilst acting as a beacon of excellence within the public sector. As a part of this exercise we reviewed our existing Corporate Risks against these plans. As a result, we identified three new corporate risks. These were assessed in accordance with our Risk Management Process and were incorporated into the Corporate Risk Register.

5. Review of effectiveness

As Accounting Officer, I have responsibility for reviewing the effectiveness of the system of internal control. My review of the effectiveness of the system of internal control is informed by the work of the internal auditors and the executive managers within the Met Office who have responsibility for the development and maintenance of the internal control framework, and comments made by the external auditors in their management letter and other reports. I have been advised on the implications of the result of my review of the effectiveness of the system of internal control by the Board, the Audit Committee, and the Risk Committee and a plan to address weaknesses and ensure continuous improvement of the system is in place.

The Met Office Board is responsible for scrutinising Met Office strategy and overseeing performance on behalf of its owner. The Executive is responsible for defining and implementing Met Office strategy and reviewing the day-to-day business performance of the Met Office, including the achievement of our Corporate Plan objectives and the associated risks. The system of internal control is enhanced further through the Bid and Investment Appraisal Committee (BIAC) which advises me on the strategic coherence of programmes and projects, and tracks delivery of their benefits; the RRC, which advises the Executive on risk management; and the Audit Committee, which has full oversight of the internal control framework, and advises the Met Office Board of its effectiveness.

The Met Office's internal audit function was carried out during 2006 by an independent firm of accountants and business advisors, PricewaterhouseCoopers (PwC), to the standards defined in the Government Internal Audit Manual. The internal audit plans are informed by the Met Office's risk profile, and by the work of other review mechanisms. These plans are continuously reviewed for effectiveness and synergy with other audit activity. In addition to the planned audit reviews, a number of additional reviews have been carried out in identified potential risk areas. The Audit Committee approves the Internal Audit programme. Where Internal Audit identifies any control issues, the sponsoring Director is responsible for drawing up a management action plan in response to the issues identified. This year, some issues were identified during audits of Stakeholder Management, Project Management and our IT Infrastructure. Action plans were put into place. These plans were reviewed by the Audit Committee. Progress towards addressing all issues raised by Internal Audit is continuously monitored by the Met Office Assurance Team which provides regular progress reports to the Audit Committee.

In conclusion, having reviewed action plans to address control issues raised by Internal Audit and having received assurance from the Audit Committee, my Executive colleagues and my Programme Managers on the effectiveness and the improvements made this year to the System of Internal Control, I am content to sign this Statement.

Mr. Mark Hutchinson
Chief Executive
22 June 2007

Statement of the responsibilities of the Agency and the Chief Executive

Under section 4(6)a of the Government Trading Funds Act 1973, HM Treasury has directed the Met Office to prepare a statement of accounts for the 2006/7 financial year in the form and on the basis set out in the Accounts Direction issued on 18 December 2006. The accounts are prepared on an accruals basis and must give a true and fair view of the Met Office's state of affairs at the year-end and of its income and expenditure, recognised gains and losses and cash flows for the financial year.

In preparing the accounts, the Accounting Officer is required to comply with the requirements of the Government Financial Reporting Manual and, in particular, to:

- observe the Accounts Direction issued by HM Treasury, including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis;
- make judgements and estimates on a reasonable basis;
- state whether applicable accounting standards as set out in the Government Financial Reporting Manual have been followed, and disclose and explain any material departures in the financial statements;
- prepare the financial statements on the 'going concern' basis, unless it is inappropriate to presume that the Agency will continue in operation.

HM Treasury has appointed the Chief Executive of the Met Office as the Accounting Officer for the Trading Fund. His responsibilities as Accounting Officer, including responsibility for the propriety and regularity of the public finances, for which he is answerable, for keeping of proper records and for safeguarding the Met Office's assets, are set out in the Accounting Officer's Memorandum, issued by HM Treasury and published in *Government Accounting*.

The Certificate and Report of the Comptroller and Auditor General to the Houses of Parliament

I certify that I have audited the financial statements of the Met Office for the year ended 31 March 2007 under the Government Trading Funds Act 1973. These comprise the Profit and Loss Account, the Balance Sheet, the Cashflow Statement and Statement of Total Recognised Gains and Losses and the related notes. These financial statements have been prepared under the accounting policies set out within them. I have also audited the information in the Remuneration Report that is described in that report as having been audited.

Respective responsibilities of the Met Office, Chief Executive and Auditor

The Met Office and Chief Executive as Accounting Officer are responsible for preparing the Annual Report, which includes the Remuneration Report, and the financial statements in accordance with the Government Trading Funds Act 1973 and HM Treasury directions made thereunder and for ensuring the regularity of financial transactions. These responsibilities are set out in the Statement of the Responsibilities of the Met Office and the Chief Executive.

My responsibility is to audit the financial statements and the part of the remuneration report to be audited in accordance with relevant legal and regulatory requirements, and with International Standards on Auditing (UK and Ireland).

I report to you my opinion as to whether the financial statements give a true and fair view and whether the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with the Government Trading Funds Act 1973 and HM Treasury directions made thereunder. I report to you whether, in my opinion, certain information given in the Annual Report, which comprises: the Directors' Report; the Management Commentary; the Financial Review; and, the unaudited part of the Remuneration Report, is consistent with the financial statements. I also report whether, in all material respects, the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

In addition, I report to you if the Met Office has not kept proper accounting records, if I have not received all the information and explanations I require for my audit, or if information specified by HM Treasury regarding remuneration and other transactions is not disclosed.

I review whether the Statement on Internal Control reflects the Met Office's compliance with HM Treasury's guidance, and I report if it does not. I am not required to consider whether this statement covers all risks and controls, or form an opinion on the effectiveness of the Met Office's corporate governance procedures or its risk and control procedures.

I read the other information contained in the Annual Report and consider whether it is consistent with the audited financial statements. I consider the implications for my report if I become aware of any apparent misstatements or material inconsistencies with the financial statements. My responsibilities do not extend to any other information.

Basis of audit opinion

I conducted my audit in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board. My audit includes examination, on a test basis, of evidence relevant to the amounts, disclosures and regularity of financial transactions included in the financial statements and the part of the Remuneration Report to be audited. It also includes an assessment of the significant estimates and judgments made by the Met Office and the Chief Executive in the preparation of the financial statements, and of whether the accounting policies are most appropriate to the Met Office's circumstances, consistently applied and adequately disclosed.

I planned and performed my audit so as to obtain all the information and explanations which I considered necessary in order to provide me with sufficient evidence to give reasonable assurance that the financial statements and the part of the Remuneration Report to be audited are free from material misstatement, whether caused by fraud or error, and that in all material respects the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them. In forming my opinion I also evaluated the overall adequacy of the presentation of information in the financial statements and the part of the Remuneration Report to be audited.

Audit opinion

In my opinion:

- the financial statements give a true and fair view, in accordance with the Government Trading Fund Act 1973 and directions made thereunder by HM Treasury, of the state of the Met Office's affairs as at 31 March 2007 and of its profit for the year then ended;
- the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with the Government Trading Fund Act 1973 and HM Treasury directions made thereunder; and
- information given within the Annual Report, which comprises the Directors' Report, the Management Commentary, the Financial Review, and the unaudited part of the Remuneration Report, is consistent with the financial statements.

Audit opinion on regularity

In my opinion, in all material respects, the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

Report

I have no observations to make on these financial statements.

John Bourn
Comptroller and Auditor General
National Audit Office
157-197 Buckingham Palace Road
London SW1W 9SP
25 June 2007

Profit and loss account

for the year ended 31 March 2007

	Notes	2006/7 £ 000	2005/6 £ 000
Turnover	3	**170,956**	170,361
Cost of sales	4, 9	**(142,070)**	(133,741)
Gross profit		**28,886**	36,620
Selling and distribution costs	4, 9	**(8,219)**	(7,205)
Administrative expenses	4, 9	**(12,816)**	(15,945)
Other operating income / (expense)	5	**9**	(51)
Operating profit		**7,860**	13,419
Profit / (loss) on disposal of fixed assets	6	**(4)**	20
Exceptional items	7	**–**	(2,285)
Amounts written-off investments		**–**	(1,533)
Profit on ordinary activities		**7,856**	9,621
Interest receivable		**1,717**	1,574
Interest payable	8	**(747)**	(1,700)
Profit for the financial year		**8,826**	9,495
Dividend payable		**(6,667)**	(6,272)
Retained profit		**2,159**	3,223
Return on capital employed (ROCE)	2	**4.0%**	5.3%

The notes on pages 54 to 75 form part of these Accounts.
The movement on the General Reserve is set out at note 19 on page 69.

Balance sheet

as at 31 March 2007

	Notes	31 March 2007 £ 000	 £ 000	31 March 2006 £ 000	 £ 000
Fixed assets					
Tangible assets	10		**187,147**		187,354
Current assets					
Stocks	11	**959**		618	
Debtors and prepayments	12	**36,022**		41,938	
Investments	13	**20**		248	
Cash on deposit	14	**30,018**		26,500	
Cash at bank and in hand	14	**1,330**		4,205	
		68,349		73,509	
Creditors: amounts falling due within one year	15	**(43,891)**		(64,600)	
Net current assets			**24,458**		8,909
Total assets less current liabilities			**211,605**		196,263
Creditors: amounts falling due after more than one year	15		**(6,769)**		(4,900)
Provisions for liabilities and charges	17		**(6,136)**		(9,070)
Net assets			**198,700**		182,293
Capital and reserves					
Public dividend capital			**58,867**		58,867
Revaluation reserve	18		**27,652**		14,625
General reserve	19		**112,181**		108,801
Total Government funds			**198,700**		182,293

Authorised for issue on 22 June 2007*

Mr. Mark Hutchinson
Chief Executive

*This represents the date of despatch by the Trading Fund's Accounting Officer for laying before the Houses of Parliament.
The notes on pages 54 to 75 form part of these Accounts.

Cash flow statement

for the year ended 31 March 2007

	Notes	**2006/7** **£ 000**	2005/6 £ 000
Net cash inflow from operating activities	22	**31,322**	35,662
Payments for exceptional items	22	**(2,538)**	(8,764)
Returns on investments and servicing of finance	22	**1,116**	(348)
Net capital expenditure	22	**(13,273)**	(15,446)
Dividends paid		**(12,270)**	–
Management of liquid resources	22	**(3,518)**	(6,000)
Decrease in financing	22	**(3,714)**	(1,125)
Increase / (decrease) in cash		**(2,875)**	**3,979**

The notes on pages 54 to 75 form part of these Accounts.

Statement of total recognised gains and losses

for the year ended 31 March 2007

	Notes	**2006/7** **£ 000**	2005/6 £ 000
Profit for the financial year		**2,159**	3,223
Change in discount rate applied to early retirement provision		**(21)**	–
Movement on revaluation of fixed assets charged to the Revaluation Reserve	18	**13,027**	2,311
Total recognised gains and losses relating to the year		**15,165**	5,534

Reconciliation of movements in Government funds		
Government funds at 1 April	**182,293**	175,753
Total recognised gains and losses relating to the year	**15,165**	5,534
Transfer to General Reserve	**1,242**	1,006
Net movement in Government funds	**16,407**	6,540
Balance at 31 March	**198,700**	182,293

The notes on pages 54 to 75 form part of these Accounts.

Notes to the accounts

1 Accounting policies

(a) Basis of accounting

These financial statements have been prepared in compliance with an Accounts Direction dated 18 December 2006 in accordance with Section 4(6)(a) of the Government Trading Funds Act 1973 and the 2006/7 Government Financial Reporting Manual (FReM) issued by HM Treasury. The accounting policies contained in the FReM follow UK generally accepted accounting practice for companies (UK GAAP) to the extent that it is meaningful and appropriate to the public sector. Where the FReM permits a choice of accounting policy, the accounting policy which has been judged to be most appropriate to the particular circumstances of the Trading Fund for the purpose of giving a true and fair view has been selected.

The accounts follow the accruals concept and have been prepared under the historical cost convention, modified to account for the revaluation of fixed assets and stocks. EU Greenhouse Gas Emission allowances are valued at their fair value.

(b) Exceptional items

Items are treated as exceptional if they derive from events or transactions that fall within ordinary operating activities and which individually, or if of a similar type in aggregate, need to be disclosed, by virtue of their size or incidence, for the financial statements to give a true and fair view.

(c) Turnover

Turnover comprises the accrued value of services (net of VAT) supplied to the private sector, Government departments and the wider public sector. Revenue is recognised in accordance with the substance of the customer's contractual arrangements and to the extent that the Met Office has performed or partially performed its contractual obligations. Where payments received from customers are greater than the revenue recognised under the contract, the amount in excess of the revenue recognised is treated as deferred income and included within creditors. Where revenue is recognised as contract activity progresses and subject to the contractual arrangements, revenue is accrued. To the extent that the revenue is in advance of an invoice being raised the amount is shown as accrued income within debtors.

(d) Research and development

Expenditure on research is charged to the Profit and Loss Account as incurred. Development expenditure is charged to the Profit and Loss Account unless the expenditure meets the capitalisation criteria set out in SSAP 13 - Research and Development. Where development expenditure comprises internal costs that relate to activities that can only be undertaken by in-house staff, such expenditure is not capitalised. As there is no expenditure meeting SSAP13 capitalisation criteria, all development expenditure has been charged to the Profit and Loss Account.

(e) Tangible fixed assets

Valuation

Freehold land and buildings in continuing use are revalued by qualified valuers every five years, in accordance with the Practice Statements and Guidance Notes set out in the Appraisal and Valuation Manual of the Royal Institution of Chartered Surveyors. Valuations are based on open market values for existing use, except where the asset is considered specialised and valued on the basis of depreciated replacement cost.

Plant, equipment and information technology equipment is capitalised where the useful life exceeds three years and the cost of acquisition and installation exceeds £5,000 (excluding VAT). From 31 March 1996, networked minor computers and related equipment, which individually do not meet the criteria, have also been capitalised. Major items of plant and equipment are revalued annually using the Gross Domestic Product Deflator Index.

Certain meteorological equipment installed in commercial aircraft or at sea is not capitalised as it is outside the direct control of the Met Office and has an uncertain operational life.

Funding received under collaborative arrangements for the capital installation of rainfall radar systems is credited as deferred income within creditors until tangible fixed assets are acquired.

The Met Office, on behalf of the UK, is a member of EUMETSAT and, as such, contributes to the cost of its satellite programmes. The Met Office and its customers benefit from the data and services resulting from these programmes. Expenditure other than research and development on programmes to date is capitalised and revalued annually using the Aerospace Combined Input Cost Index published by the Office for National Statistics.

Depreciation

Freehold land is not depreciated. Depreciation on buildings is calculated to write-off the cost, or value, by equal instalments over the asset's estimated useful life (not exceeding 50 years). Plant and equipment and information technology assets are depreciated by the straight-line method at a rate calculated to write-off the cost, or value, over the asset's estimated useful life. Current policy is to write-off plant and equipment over three to 30 years and information technology equipment over three to five years. Satellite assets are depreciated using the straight-line method, based on the total cost of the programme (including future planned expenditure) and the expected operational life, currently 15 years.

Fixtures and fittings include improvements to leasehold buildings and are depreciated over five to 25 years.

Where there is evidence of impairment, fixed assets are written down to recoverable amount.

(f) Leased assets

Assets held under finance leases are included in the Balance Sheet as tangible fixed assets at their equivalent capital value and are depreciated over their estimated economic lives or the finance lease period, whichever is shorter. The finance lease period includes the primary lease term together with further terms where it is reasonably certain at the inception of the lease that the Met Office will exercise its option to extend. The corresponding liability is recorded as a creditor. The interest element of the rental costs is charged against profits, using the actuarial method, over the period of the lease. Both a general purpose computing server and a supercomputer are held under finance leases.

Rents for those leasehold properties and vehicles which are held under operating leases are charged against profits.

(g) Stocks

Stocks are valued at the lower of cost, or net current replacement cost if materially different, and net realisable value.

(h) Insurance

The Met Office reviews its risk exposures and ensures that appropriate insurance is provided.

(i) Pensions

Pension benefits are provided through the Civil Service pension arrangements. From 1 October 2002 Met Office staff, as civil servants, may be in one of three statutory based "final salary" defined benefit schemes (Classic, Premium and Classic Plus). New entrants after 1 October 2002 may choose between membership of Premium or joining a good quality "money purchase" stakeholder based arrangement with a significant employer contribution (partnership pension account).

Classic Scheme

Benefits accrue at the rate of 1/80th of pensionable salary for each year of service. In addition, a lump sum equivalent to three years' pension is payable on retirement. Members pay contributions of 1.5% of pensionable earnings. On death, pensions are payable to the surviving spouse at a rate of half the member's pension. On death in service, the scheme pays a lump sum benefit of twice pensionable pay and also provides a service enhancement on computing the spouse's pension. The enhancement depends on length of service and cannot exceed ten years. Medical retirement is possible in the event of serious ill health. In this case, pensions are brought into payment immediately without actuarial reduction and with service enhanced as for widow(er) pensions.

Premium Scheme

Benefits accrue at the rate of 1/60th of final pensionable earnings for each year of service. Unlike Classic, there is no automatic lump sum, but members may commute some of their pension to provide a lump sum up to a maximum of 3/80ths of final pensionable earnings for each year of service or 2.25 times pension if greater (the commutation rate is £12 of lump sum for each £1 of pension given up). For the purposes of pension disclosure the tables assume maximum commutation. Members pay contributions of 3.5% of pensionable earnings. On death, pensions are payable to the surviving spouse or eligible partner at a rate of 3/8ths the member's pension (before any commutation). On death in service, the scheme pays a lump-sum benefit of three times pensionable earnings and also provides a service enhancement on computing the spouse's pension. The enhancement depends on length of service and cannot exceed ten years. Medical retirement is possible in the event of serious ill health. In this case, pensions are brought into payment immediately without actuarial reduction. Where the member's ill health is such that it permanently prevents them undertaking any gainful employment, service is enhanced to what they would have accrued at age 60.

Classic Plus Scheme

This is essentially a variation of Premium, but with benefits in respect of service before 1 October 2002 calculated broadly as per Classic.

Pensions payable under Classic, Premium, and Classic Plus are increased in line with the Retail Prices Index.

Partnership Pension Account

This is a stakeholder-type arrangement where the employer pays a basic contribution of between 3% and 12.5% (depending on the age of the member) into a stakeholder pension product. The employee does not have to contribute but where they do make contributions, these will be matched by the employer up to a limit of 3% (in addition to the employer's basic contribution). Employers also contribute a further 0.8% of pensionable salary to cover the cost of risk benefit cover (death in service and ill health retirement). The member may retire at any time between the ages of 50 and 75 and use the accumulated fund to purchase a pension. The member may choose to take up to 25% of the fund as a lump sum.

(j) Cash

Cash includes cash in hand and deposits payable on demand with any qualifying institution, less overdrafts from any qualifying institution repayable on demand. Cash also includes any balance held within the Working Capital Fund at EUMETSAT.

(k) Financial instruments

Currency risk

In order to manage foreign exchange risk the Met Office policy is to buy forward foreign currency for payments to international bodies as soon as amounts can be reliably estimated. The payments are in respect of annual subscriptions and contributions including payments for satellite programmes. In this case, payments are accounted for in sterling at the forward purchase rate. All other foreign currency payments are accounted for at the sterling equivalent at the exchange rate ruling on the day the payment is made.

Interest rate risk

The Met Office follows the Treasury rules by investing all surplus funds with HM Treasury. Surplus funds are deposited with the UK Debt Management Office.

Liquidity risk

The Met Office has limited exposure to liquidity risk due to loan funding from the Ministry of Defence. Short term debtors and creditors are excluded from financial instruments.

(l) Consolidated accounts

The Met Office has no subsidiaries, associates or joint ventures which require the production of group accounts.

2 Key financial targets

The Met Office's key financial targets for 2006/7, as announced in Parliament (14 June 2006, Column 61WS), were:

(a) To achieve a Return on Capital Employed of at least 3.5% in support of a longer term target to average 3.5% over the five year period commencing 1 April 2004;

(b) To achieve a profit contribution of £3.6 million from services provided on a commercial basis.

Results

(a) Return on Capital Employed (ROCE)

ROCE is a measure of how effectively an organisation is using its capital. It is calculated as the surplus on ordinary activities before interest and dividends, expressed as a percentage of average capital employed. Capital employed equates to the capital and reserves.

The table below shows the in-year and averaged ROCE over the period from the beginning of the current target period (1 April 2004) to 31 March 2007.

	2006/7	2005/6
Actual	**4.0%**	5.3%
Target – in-year	**3.5%**	3.5%
Average – current target period	**5.6%**	6.5%
Target – 5-year average	**3.5%**	3.5%

(b) Commercial profitability

This measures profitability on revenue from services provided on a commercial basis from sources not directly funded by the Exchequer, including local government organisations, public bodies overseas and private sector companies. This will normally be in competition with other service providers. The Met Office is permitted to seek business from central government departments, provided a process or competition applies to assure value for money to the taxpayer.

	2006/7 **£ 000**	2005/6 £ 000
Actual	**3,947**	2,923
Target	**3,600**	2,800

3 Turnover and segmental analysis

	2006/7 **£ 000**	2005/6 Restated £ 000
Public Weather Service	**86,100**	84,017
Defence	**32,993**	34,629
Civil Sector Services	**4,518**	4,527
Climate Research	**19,662**	17,604
Commercial	**27,074**	28,486
Other	**609**	1,098
Total turnover	**170,956**	170,361

(i) All turnover relates to the same class of business, the provision of meteorological and related services. There were no acquisitions or discontinued operations.

(ii) During the year the National Met Programme (NMP) was replaced by the Public Weather Service (PWS) programme. The Public Weather Service enables the UK public to make informed decisions in their day-to-day activities, to optimise or mitigate against the impact of the weather and to contribute to the protection of life, property and basic infrastructure. The data produced by the PWS are also an essential input to a wide range of other Met Office services. The Public Weather Service is funded as follows:

	2006/7 **£ 000**	2005/6 Restated £ 000
Ministry of Defence	**65,351**	64,615
Civil Aviation Authority	**17,886**	17,449
Wholesaling	**1,289**	898
Other	**1,574**	1,055
Total PWS funding	**86,100**	84,017

(iii) The share of net assets relating to each class of turnover is not identifiable.

(iv) Turnover includes £1,537,000 of income derived from EU contracts (2005/6 £768,000).

4 Cost of sales, selling and distribution and administrative charges

Cost of sales is defined as that expenditure which is directly related to a service or product being supplied to a specific third-party customer or market. This includes direct materials and labour, development costs and fixed and variable overheads to the extent that these relate specifically to production. Cost of sales also includes the cost of the National Meteorological Library.

Selling and distribution includes costs relating to marketing and market research, the Customer Centre, and the costs associated with maintaining the Met Office website.

Administrative expenses includes all costs relating to the general management of the business, training, technical support, and any research and development costs not included under cost of sales. It also includes the costs of strategic investment projects.

Administrative expenses includes Relocation costs of £0.3m (2005/6 £0.8m). Also included within Administrative expenses are general administrative costs of £11.2 m (2005/06 £12.8m).

Exceptional items are analysed between cost of sales, selling and distribution and administrative expenses as follows:

	Cost of sales £ 000	Selling and distribution costs £ 000	Administrative expenses £ 000	**2006/7 total £ 000**	2005/6 total £ 000
Early retirement and severance costs	945	137	80	**1,162**	–
Legal, professional and other fees	–	–	83	**83**	–
Loss on revaluation of plant and machinery asset	1,803	–	–	**1,803**	–
Impairment loss on plant and machinery asset	4,513	–	–	**4,513**	–
	7,261	137	163	**7,561**	–

Exceptional items arising in 2006/7 are shown under the appropriate statutory headings in arriving at operating profit in accordance with Financial Reporting Standard 3. The exceptional items in respect of 2005/6 are considered to be non-operational exceptional items under the provisions of Financial Reporting Standard 3 and therefore shown after operating profit (see note 7).

(i) The early retirement and severance costs represent a voluntary early retirement and severance scheme that operated during the year.

(ii) Legal, professional and other fees relate to costs in relation to the administration and liquidation of weatherXchange Limited.

(iii) Loss on revaluation of plant and machinery asset relates to the revaluation undertaken during the year in respect of the Exeter HQ mechanical and electrical services asset. (see note 10).

(iv) Impairment loss on plant and machinery asset arises on the Exeter HQ mechanical and electrical services asset. The recoverable amount, based on its value in use and measured by reference to its service potential was assessed as being below the asset's carrying value.

Cost of sales, selling and distribution and administrative charges are further analysed by expenditure type as follows:

	Note	**2006/7** **£ 000**	2005/6 £ 000
Staff costs (excluding exceptional items)	9	**75,955**	76,589
Early retirement costs	(i)	**297**	858
Relocation – staff accommodation, travel and subsistence	(ii)	**283**	779
Other travel and subsistence		**5,175**	4,682
Equipment and services		**26,981**	26,177
Accommodation	(iii)	**7,684**	6,618
Operating leases – plant and machinery		**1,323**	1,249
Operating leases – other		**(671)**	1,652
Depreciation – on owned assets		**19,070**	18,519
– on assets held under finance leases		**4,311**	4,419
International services and subscriptions	(iv)	**12,556**	12,660
Exceptional items – see above		**7,561**	–
Other expenses		**2,580**	2,689
Total		**163,105**	156,891

(i) The early retirement cost excludes the early retirement costs scheme undertaken during the year which are shown as an exceptional item (note 4).

(ii) Relocation travel and subsistence relates to the costs of housing removal, temporary accommodation and travel between Bracknell and Exeter, for those staff who relocated to Exeter.

(iii) Accommodation includes £1.3 million (2005/6, £2.0 million) operating lease rentals of property.

(iv) International services and subscriptions include £2.6m (2005/6 £1.7m) to the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) (excluding amounts capitalised as satellite assets), £1.0m (2005/6 £2.0m) to the British National Space Centre, £4.9m (2005/6 £4.5m) to the European Centre for Medium-Range Weather Forecasts (ECMWF), £1.8m (2005/6 £1.8m) to the World Meteorological Organization (WMO) and £0.6m (2005/6 £0.5m) to the Network of European Meteorological Services Composite Observing System (EUCOS).

Membership of these organisations enables the Met Office, on behalf of the UK, to engage in and benefit from, the European meteorological satellite programme and to receive support in its provision of medium-range weather forecasts and associated research. Membership also enables the Met Office, on behalf of the UK, to promote and benefit from co-operations between members in the exchange of observational data and forecasts, together with a widening range of environmental programmes.

(v) Other administrative expenses include an external audit fee of £65,500 (2005/6 £58,000) and a fee of £17,000 (2005/6, £17,000) for the review of Key Performance Indicators. The Met Office also incurred non-audit fees amounting to £9,000 (2005/6 £ 8,000) in respect of the certification of certain EU contracts.

(vi) The total cost of research was £38.9m (2005/6 restated, £36.4m). The 2005/6 figure has been restated to ensure consistency with 2006/7 following a minor change in structure of the research programme.

5 Other operating (income) / expense

	2006/7 **£ 000**	2005/6 £ 000
Foreign exchange rate differences	**(9)**	51

6 Profit / (loss) on disposal of fixed assets

	2006/7 **£ 000**	2005/6 £ 000
Net (profit)/loss on disposal of fixed assets	**4**	(20)

7 Exceptional items

	2006/7 **£ 000**	2005/6 £ 000
Early retirement and severance costs	–	600
Leaseholds provision	–	1,664
Net gain on the disposal of Bracknell leaseholds	–	(124)
Legal, professional and other fees	–	145
Total	–	2,285

The exceptional items above are considered to be non-operational exceptional items under the provisions of Financial Reporting Standard 3 and therefore shown after operating profit. Exceptional items arising in 2006/7 are shown under the appropriate statutory headings in arriving at operating profit (see note 4).

(i) The early retirement and severance costs of £600,000 related to the provision arising from the decision to centralise the Met Office's civil forecast production network.

(ii) The leasehold provision related to rents and other costs of leasehold properties which became non-operational following the decision to centralise civil forecast production and weatherXchange Limited vacating the leasehold property sublet to them by the Met Office.

(iii) The net gain on the disposal of the Bracknell leaseholds arose from the simultaneous purchase and sale of the freehold interest in three leasehold properties previously occupied in Bracknell. The provision for rent and other associated costs relating to these properties was also released resulting in the net gain above. The transaction results in the Met Office relinquishing its leasehold liabilities for these properties.

(iv) The legal and professional fees relate to advice received in respect of the administration of weatherXchange Limited.

8 Interest payable and similar charges

	2006/7 £ 000	2005/6 £ 000
On amounts wholly repayable within five years	**295**	871
On MoD loans repayable within five years	**304**	–
On finance leases wholly repayable within five years	**3**	19
Discounting of provisions	**145**	810
Total interest payable and similar charges	**747**	1,700

9 Staff

(a) Staff costs

	Note	2006/7 £ 000	2005/6 £ 000
Salaries, bonuses and allowances		**59,899**	60,658
Early retirement costs	4, 7	**1,459**	1,458
Social security		**5,071**	5,200
Pension contributions		**10,985**	10,731
Total staff costs		**77,414**	78,047
Temporary / agency labour costs		**4,075**	3,422
Total		**81,489**	81,469

The Principal Civil Service Pension Scheme (PCSPS) is an unfunded multi-employer defined benefit scheme which prepares its own scheme statements. The Met Office is unable to identify its share of the underlying assets and liabilities. The Scheme Actuary (Hewitt Bacon Woodrow) conducted a full actuarial valuation as at 31 March 2003. Details can be found in the resource accounts of the Cabinet Office: Civil Superannuation (www.civilservice-pensions.gov.uk).

For 2006/7, pursuant to the Superannuation Act 1972, employer's contributions of £11.0m were payable to the PCSPS (2005/6 £10.7m) at one of four rates in the range 17.1% to 25.5% of pensionable pay, based on salary bands (the rates in 2005/6 were between 16.2% and 24.6%). From 2007/8, the salary bands will be revised but the rates will remain the same. Employer contributions are to be reviewed every four years following a full scheme valuation by the Government Actuary. The contribution rates are set to meet the cost of the benefits accruing during 2006/7 to be paid when the member retires and not the benefits paid during this period to existing pensioners.

Employees joining after 1 October 2002 can opt to open a partnership pension account, a stakeholder pension with an employer contribution. Employer's contributions, paid to appointed stakeholder pension providers and also to the Principal Civil Service Pension Scheme to cover the cost of the future provision of lump sum benefits on death in service and ill health retirement of these employees, were immaterial.

Staff costs include exceptional items in respect of early retirement and severance of £1,162,000 (2005/6 £600,000).

(b) Average staff numbers

	2006/7 number	2005/6 number
Senior management	**6**	7
Scientific, managerial, technical	**1,343**	1,385
Support	**341**	352
Locally engaged civilians overseas	**18**	19
Monthly average staff numbers (all UK Government Civil Servants except locally engaged civilians)	**1,708**	1,763

There were 1,684 staff employed at 31 March 2007 compared with 1,719 at 31 March 2006, both figures expressed as full-time equivalents. There were also 63 temporary/agency staff, expressed as full-time equivalents, engaged by the Met Office at 31 March 2007.

(c) Directors' remuneration

Details of Directors' emoluments are contained within the Remuneration Report on page 39. Details of fees paid to Non-Executive Directors are also contained in the Remuneration Report.

10 Tangible fixed assets

The movements in each class of assets were:

	Satellite programme £ 000	Land and buildings £ 000	Fixtures and fittings £ 000	Plant and equipment £ 000	Information technology £ 000	ACOC £ 000	Total tangible £ 000
Cost or valuation:							
At 1 April 2006	192,846	59,624	6,882	49,719	58,863	45	367,979
Additions	8,232	5	485	2,632	3,865	6	15,225
Disposals	–	–	–	(333)	(2,599)	–	(2,932)
Revaluation	10,583	7,294	100	(5,006)	–	–	12,971
At 31 March 2007	**211,661**	**66,923**	**7,467**	**47,012**	**60,129**	**51**	**393,243**
Depreciation:							
At 1 April 2006	126,995	2,426	2,445	11,174	37,584	–	180,624
Charged during year	11,309	1,102	465	2,129	8,376	–	23,381
Impairment	–	–	–	4,513	–	–	4,513
Disposals	–	–	–	(329)	(2,598)	–	(2,927)
Revaluation	6,966	(3,123)	20	(3,358)	–	–	505
At 31 March 2007	**145,270**	**405**	**2,930**	**14,129**	**43,362**	**–**	**206,096**
Net book value:							
At 1 April 2006	65,851	57,198	4,437	38,545	21,279	45	187,355
At 31 March 2007	**66,391**	**66,518**	**4,537**	**32,883**	**16,767**	**51**	**187,147**

Assets held under finance leases included above:

	Satellite programme £ 000	Land and buildings £ 000	Fixtures and fittings £ 000	Plant and equipment £ 000	Information technology £ 000	ACOC £ 000	Total tangible £ 000
Cost:							
At 31 March 2007	–	–	–	–	21,596	–	21,596
Depreciation:							
Charge for year	–	–	–	–	4,311	–	4,311
Depreciation:							
At 31 March 2007	–	–	–	–	14,738	–	14,738

(i) All land and buildings are held as freehold. The net book value of freehold land and buildings includes £11.3 million of freehold land (1 April 2006, £7.8m) which has not been depreciated. Freehold buildings are depreciated in full over their estimated life (not exceeding 50 years).

(ii) Fixtures and fittings include improvements to leasehold buildings and are depreciated over five to 25 years.

(iii) Land and buildings, excluding the Exeter headquarters, were valued by GVA Grimley, International Property Advisers on 30 June 2005 in accordance with the Appraisal and Valuation Standard (5th Edition), published by the Royal Institution of Chartered Surveyors. The properties are all held for operational purposes and have been valued on the basis of Existing Use Value (minor elements of one site were valued on a Depreciated Replacement Cost basis) as defined in the Appraisal and Valuation Standard.

Following the small fire incident during 2005/6 and subsequent investigations it was decided to bring forward the quinquennial revaluation of the Exeter headquarters to 2006/7. The Exeter headquarters land, buildings and mechanical and electrical services (within plant and equipment) were revalued by Atisreal, Chartered Surveyors on 1 December 2006 in accordance with the Appraisal and Valuation Standards (the "Red Book"), published by the Royal Institution of Chartered Surveyors. The assets concerned were considered to be specialised and have been valued on the basis of Depreciated Replacement Cost. As a result of the valuation undertaken, there was an increase in the net book value of land and buildings of £10.4 million and a decrease in the net book value of plant and equipment of £1.8 million.

(iv) Assets held under finance leases comprise a supercomputer and equipment providing a general purpose computing service. The Met Office has exercised its option under the lease to extend the lease term into the secondary rental period.

(v) Assets in the Course of Construction represents the purchase and refurbishment of a weather radar.

11 Stocks

	Note	**31 March 2007 £ 000**	31 March 2006 £ 000
Meteorological equipment		**784**	485
Reserve equipment		**140**	97
Consumable stores		**35**	36
Total stock		**959**	618

12 Debtors

	Note	**31 March 2007** **£ 000**	31 March 2006 £ 000
Amounts falling due within one year:			
Trade debtors		**21,350**	13,989
Other debtors		**451**	12,198
Prepayments and accrued income		**14,221**	15,751
Total debtors		**36,022**	41,938

Other debtors include staff loans totalling £434,000 to 64 officers predominently in respect of housing advances on relocation.

	Note	**31 March 2007** **£ 000**	31 March 2006 £ 000
Intra-government balances			
Balances with central government bodies		**12,359**	11,999
Balances with local authorities		**158**	126
Balances with NHS Trusts		**3**	109
Balances with public corporations and trading funds		**563**	3,144
Subtotal: intra-government balances		**13,083**	15,377
Balances with bodies external to government		**22,939**	26,561
Total debtors at 31 March		**36,022**	41,938

All intra-government balances are due within one year.

13 Current asset investments

	Note	**31 March 2007** **£ 000**	31 March 2006 £ 000
Intangible asset - Emissions Trading Scheme Allowances		**20**	248

During the year, the Met Office received allowances under the EU Greenhouse Gas Emission Allowance Trading Directive Scheme. Allowances are valued at open market value.

14 Analysis of changes in cash at bank and in hand

	Note	31 March 2007 £ 000	31 March 2006 £ 000
Balance at 1 April		**4,205**	226
Net cash inflow / (outflow)	22	**(2,875)**	3,979
Balance at 31 March		**1,330**	4,205

The Met Office holds three Euro bank accounts, in which there were amounts totalling £357,000 at 31 March 2007 belonging to third parties (31 March 2006 £2,461,000).
Cash in transit at 31 March 2007 amounted to £1,033,000.
Cash surplus to immediate requirements at 31 March 2007 amounted to £30 million and is held in short-term interest-bearing accounts (31 March 2006, £26.5 million) with the UK Debt Management Office at HM Treasury.

15 Creditors

	Note	31 March 2007 £ 000	31 March 2006 £ 000
Amounts falling due within one year:			
Trade creditors		**7,468**	15,640
VAT		**3,911**	5,163
Other taxation and social security		**1,777**	1,864
Accruals		**12,944**	10,900
Dividend – payable		**6,667**	12,270
Deferred income		**8,591**	10,647
Obligations under finance leases		**–**	7,016
Long-term loan repayable within one year		**2,533**	1,100
Total amounts falling due within one year		**43,891**	64,600
Amounts falling due after more than one year:			
Long-term loan (note 16)		**6,769**	4,900
Total amounts falling due after more than one year		**6,769**	4,900
Total creditors		**50,660**	69,500

The dividend payable at 31 March 2006 includes the dividend payable in respect of 2004/5. This was paid in May 2006.

	Amounts falling due within one year		Amounts falling due after more than one year	
	31 March 2007	31 March 2006	**31 March 2007**	31 March 2006
	£ 000	£ 000	**£ 000**	£ 000
Intra-government balances				
Balances with central government bodies	**9,657**	13,933	**6,769**	4,900
Balances with local authorities	**183**	1,184	**–**	–
Balances with public corporations and trading funds	**1**	–	**–**	–
Subtotal: intra-government balances	**9,841**	15,117	**6,769**	4,900
Balances with bodies external to Government	**34,050**	49,483	**–**	–
Total creditors at 31 March	**43,891**	64,600	**6,769**	4,900

16 Long-term loans

Ministry of Defence loans, repayable by instalments and bearing interest at 4.45% and 5.65% per annum:

	31 March 2007	31 March 2006
	£ 000	£ 000
Amounts repayable:		
In not more than one year	**2,533**	1,100
In more than 1 year but not more than 2 years	**2,663**	1,148
In more than 2 years but not more than 5 years	**4,106**	3,752
Total	**9,302**	6,000

17 Provisions for liabilities and charges

	Early Retirement £ 000	Dilapidations £ 000	Leaseholds £ 000	Civil Network £ 000	Emissions £ 000	Total £ 000
Balance at 1 April 2006	3,303	1,193	3,855	600	119	9,070
Provided in the year	1,528	–	–	–	–	1,528
Reclassification	586	–	–	(586)	–	–
Unwinding of discount	54	16	75	–	–	145
Change in discount rate	21	–	–	–	–	21
Utilised in year	(2,090)	(147)	(434)	(14)	(113)	(2,798)
Released to Profit and Loss Account in year	–	–	(1,830)	–	–	(1,830)
Balance at 31 March 2007	**3,402**	**1,062**	**1,666**	**–**	**6**	**6,136**

(i) The Early Retirement Provision represents the pension costs associated with 130 staff who had been offered early retirement as at 31 March 2007 and comprises the full cost of meeting each individual's pension payments to normal retirement age. The gross amount provided for, before discounting, is £3.5m (2005/6 £3.4m). After discounting at 1.8% a net amount of £3.4m (2005/6 £3.3m) is provided.

(ii) The Dilapidations Provision relates to contractual future costs of making good leasehold properties when they are vacated. Discounting has been applied where payments are due in more than one year. The gross amount provided for, before discounting, is £1.2m (2005/6 £1.4m). After discounting at 2.2% a net amount of £1.0m (2005/6 £1.2m) is provided.

(iii) The Leaseholds Provision is principally in respect of future cost of leasehold properties which became surplus to requirements on relocation to Exeter. The gross amount provided, before discounting, is £1.8m (2005/6 £4.2m). After discounting at 2.2% a net amount of £1.7m (2005/6 £3.9m) is provided. Following the decision to bring the London leasehold property into operational use, the provision has been released.

(iv) The Civil Network Provision represents early retirement and severance costs associated with the decision to centralise the Met Office's civil forecast production network. During 2006/7 the provision has been reclassified to the Early Retirement Provision.

(v) The Emissions Provision represents the obligation to deliver allowances in respect of emissions made under the EU Greenhouse Gas Emission Allowance Trading Directive.

The commitments provided for fall due in the following periods:

	Early retirement £ 000	Dilapidations £ 000	Leaseholds £ 000	Civil Network £ 000	Emissions £ 000	Total £ 000
Amounts payable within:						
Under one year	1,723	156	311	–	6	2,196
One to five years	1,663	71	938	–	–	2,672
Over five years	16	835	417	–	–	1,268
Total	**3,402**	**1,062**	**1,666**	**–**	**6**	**6,136**

18 Revaluation Reserve

	31 March 2007		31 March 2006	
	£ 000	**£ 000**	£ 000	£ 000
Revaluation Reserve at 1 April		**14,625**		12,314
Revaluation of satellite assets	**3,617**		1,819	
Revaluation of land, buildings, plant and equipment	**10,652**		1,497	
Transfer to General Reserve	**(1,242)**		(1,006)	
		13,027		2,311
Revaluation Reserve at 31 March		**27,652**		14,625

19 General Reserve

	31 March 2007 **£ 000**	31 March 2006 £ 000
General Reserve at 1 April	**108,801**	104,572
Transfer from Revaluation Reserve	**1,242**	1,006
Charge due to change in discount rate applied to early retirement provision	**(21)**	–
Retained profit	**2,159**	3,223
General Reserve at 31 March	**112,181**	108,801

20 Obligations under finance leases

	2006/7 **£ 000**	2005/6 £ 000
Repayable:		
Falling due after more than one year	–	–
Falling due within one year	–	7,016
Total	–	7,016

The total obligation at 31 March 2006 related to a supercomputer and general purpose computing service equipment, each of which were held under a finance lease at implicit lease interest rates of nil% and 6.25% respectively.

21 Related parties

The Ministry of Defence (MoD) is regarded as a related party. During the year, the Met Office had material transactions with this Department and with other entities for which MoD is regarded as the parent department. In addition, the Met Office had material transactions with a number of other public bodies, Government departments and their agencies, principally the Civil Aviation Authority, the Department for Transport, Local Government and the Regions, the Home Office and the Department for Environment, Food and Rural Affairs. None of the Met Office Board members, key managerial staff or other related parties undertook any material transactions with the Met Office during the year.

22 Notes to the cash flow statement

(a) Reconciliation of operating profit to net cash inflow from operating activities

	Note	**2006/7** **£ 000**	2005/6 £ 000
Operating profit		**7,860**	13,419
Depreciation charges	4, 10	**23,381**	22,938
Exceptional item - impairment of plant and machinery asset	4	**4,513**	–
Exceptional items - revaluation of plant and machinery asset	4	**1,803**	–
Provisions for liabilities and charges		**(283)**	651
Provisions utilised in year	17	**(147)**	(221)
(Increase) / Decrease in stocks		**(341)**	(59)
(Increase) / Decrease in debtors		**(6,091)**	1,986
Increase / (Decrease) in creditors		**627**	(3,052)
Net cash inflow from operating activities		**31,322**	35,662

(b) Gross cash flows

	31 March 2007		31 March 2006	
	£ 000	£ 000	£ 000	£ 000
Payments for exceptional items				
Early retirement	**(2,104)**		(1,558)	
Settlement to terminate Bracknell leaseholds	**–**		(5,832)	
Leaseholds	**(434)**		(1,374)	
		(2,538)		(8,764)
Returns on investments and servicing of finance				
Interest received	**1,687**		1,574	
Interest paid	**(568)**		(1,903)	
Interest element of finance lease rentals	**(3)**		(19)	
		1,116		(348)
Capital expenditure				
Payments to acquire satellite assets	**(18,475)**		(19,309)	
Payments to acquire plant and machinery, land and buildings	**(6,498)**		(7,857)	
Receipts from sales of tangible fixed assets	**11,700**		11,720	
		(13,273)		(15,446)
Management of liquid resources				
Net payments to Debt Management Office deposit account		**(3,518)**		(6,000)
Financing				
Capital element of finance lease rental payments	**(7,016)**		(7,125)	
Loan advance received	**4,400**		6,000	
Loan repayments	**(1,098)**		–	
		(3,714)		(1,125)

(c) Analysis of changes in net funds

	At 1 April 2006 £ 000	Cash flows £ 000	Other changes £ 000	**At 31 March 2007 £ 000**
Cash at bank and in hand	4,205	(2,875)	–	**1,330**
Cash on deposit	26,500	3,518	–	**30,018**
Sub-total	30,705	643	–	**31,348**
Finance lease obligations	(7,016)	7,016	–	–
Debt due within one year	(1,100)	(289)	(1,144)	**(2,533)**
Debt due after one year	(4,900)	(3,013)	1,144	**(6,769)**
Total	17,689	4,357	–	**22,046**

(d) Reconciliation of net cash flow to movement in net debt

	Note	**2006/7 £ 000**	2005/6 £ 000
Increase / (Decrease) in cash	22	**(2,875)**	3,979
Increase in cash on deposit	22	**3,518**	6,000
Other movements	22	**3,714**	1,125
Increase in net funds		**4,357**	11,104
Net funds at 1 April	22	**17,689**	6,585
Net funds at 31 March		**22,046**	17,689

23 Operating leases

Annual commitments are as follows:	Land and Buildings **2006/7 £ 000**	Land and Buildings 2005/6 £ 000	Other **2006/7 £ 000**	Other 2005/6 £ 000
Leases expiring within:				
Under one year	**457**	81	**321**	1
One to five years	**235**	660	**17**	473
Over five years	**617**	594	**1,097**	1,097
Total	**1,309**	1,335	**1,435**	1,571

24 Capital commitments

	2006/7 £ 000	2005/6 £ 000
Contracted for but not provided for:		
Other	**2,355**	1,189
Contribution for Satellite Programme	**3,897**	5,949
Total	**6,252**	7,138

The commitment for the Satellite Programme represents the unpaid portion of the UK approved contribution to EUMETSAT programmes for the current calendar year. Future payments are subject to annual approval by the EUMETSAT Council.

25 Losses and special payments

There were no additional costs in respect of provisions relating to rents and other costs of leasehold properties which were non-operational at 31 March 2007 (31 March 2006 £1,664,000).

26 Derivatives and other financial instruments

The Met Office's treasury operations are governed by the Met Office Trading Fund Order 1996, under the Government Trading Funds Act 1973 (a) as supplemented by the Met Office's Framework Document.

The Met Office's financial instruments comprise cash deposits, debtors, creditors, loans, provisions and foreign currency forward exchange contracts. The main purpose of these financial instruments is to finance the Met Office's operations. The Met Office has limited powers to borrow or invest surplus funds.

The main risks arising from the Met Office's financial instruments are foreign currency, liquidity and interest rate risks. The Met Office's policies for managing these risks are set to achieve compliance with the regulatory framework including the rules contained within Government Accounting.

Foreign currency risk

The Met Office makes significant foreign currency payments for subscriptions and contributions to international meteorological organisations. These costs are funded by the National Met Programme. To manage the risk of currency movements, the Met Office has a policy of buying forward foreign currency.

Liquidity risk

The Met Office has maintained short-term liquidity throughout the year by management of its cash deposits. To finance the disposal of the leasehold properties in Bracknell in 2005/6, the Met Office borrowed £6.0 million from our sponsor department, the Ministry of Defence. During 2006/7 loan funding has also been received from the Ministry of Defence to finance the centralisation of the Met Office's civil forecast production network and commercial strategy. All loans are repayable over five years.

Interest rate risk

The Met Office finances its operations through retained profits. Amounts retained in the business but surplus to immediate requirements are deposited in short-term interest-bearing accounts with the UK Debt Management Office at HM Treasury. The Met Office may also be funded by additional monies from the Ministry of Defence to fund specific strategic requirements.

Short term debtors and creditors are excluded from the following disclosures:

Financial Assets	Fixed rate £ 000	Floating rate £ 000	**Total 31 March 2007 £ 000**
Cash on deposit	–	30,018	**30,018**

Cash on deposit at 31 March 2007 consists of 13 short term deposits totalling £30 million with the UK Debt Management Office at HM Treasury for a weighted average period of 30.3 days at a weighted average interest rate of 5.26%. At 31 March 2007 £18,000 was also held on deposit in the working capital fund at EUMETSAT. The fair value of financial assets approximates to the book value.

Financial Liabilities	Fixed rate £ 000	Floating rate £ 000	**Total 31 March 2007 £ 000**
Ministry of Defence Loan (Note 17)	9,302	–	**9,302**

The fair value of the loan is assessed at £8.3 million as at 31 March 2007, calculated by discounting cash flows at prevailing interest rates.

Forward foreign currency contracts

As at 31 March 2007 the Met Office held one forward contract to buy a total of ¤2.5 million, equating to £1.7 million at the contracted exchange rates, with a value date in 2007/8.

Five-year financial summary

	2006/7 £ 000	2005/6 £ 000	2004/5 £ 000	2003/4 £ 000	2002/3 £ 000
Profit and loss account					
Turnover	**170,956**	170,361	165,580	160,775	157,398
Gross profit	**28,886**	36,620	38,647	29,279	29,634
Operating profit / (loss)	**7,860**	13,419	9,524	(9,207)	(5,058)
Retained profit / (loss)	**2,159**	3,223	6,278	1,891	(7,351)
Capital expenditure					
Tangible fixed assets additions	**15,225**	15,518	22,107	57,600	48,856
Balance sheet					
Fixed assets	**187,147**	187,354	192,990	199,747	162,230
Net current assets	**24,458**	8,909	8,929	1,291	4,631
Non-current assets	**–**	–	–	11,700	–
Non-current liabilities	**12,905**	13,970	26,166	45,163	7,363
Number of employees					
Average for year	**1,708**	1,763	1,799	1,829	2,097

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